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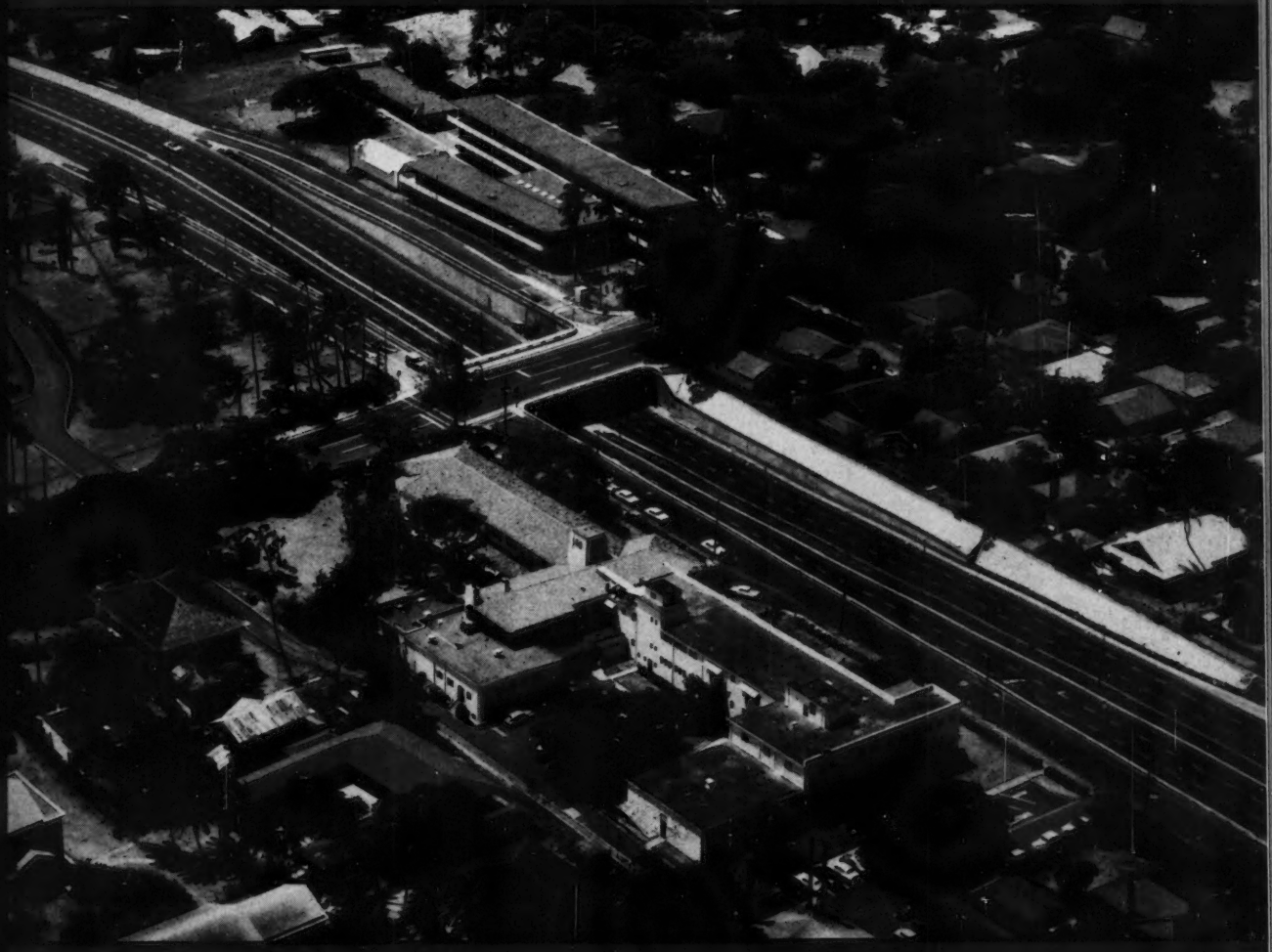
Part One

TRAFFIC ENGINEERING



Highway Safety — A Primary Challenge to Traffic Engineering

Traffic Controls in Parking Ramps

Progress of the Twin Cities Area Transportation Study

ITE Membership Survey — 1959

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How optically flat reflective sheeting keeps entire sign visible in any weather

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Fig. 1. The pan on the left holds two reflective samples. "A" is optically flat "Scotchlite" Sheeting; "B" is an exposed lens material. When dry, both reflect. In the pan on the right, one inch of water covers both samples. While "Scotchlite" Sheeting loses little of its designed reflectivity, sample "B," with its optical characteristics changed, "blacks out."

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Where reflective elements are exposed, however, water fills in and alters the optical focus, causing a severe loss in reflection. The photo in Fig. 1 demonstrates this point.

Shown are two pieces of reflective material. That labelled "A" is optically flat "Scotchlite" Sheeting. "B" is exposed lens sign material. In the first picture, both are dry, both reflective. In the second, both have been placed *under water*. You can see how the sample of "Scotchlite" Sheeting continues to reflect to a high degree while the other, sample "B," has blacked out. Here is positive proof that "Scotchlite" Sheeting succeeds in communicating when exposed lens systems fail.

* * *

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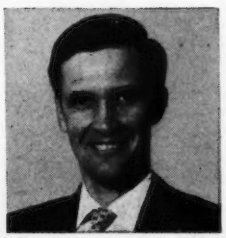

... says R. J. Colpitts, Traffic Engineer, Alhambra, California

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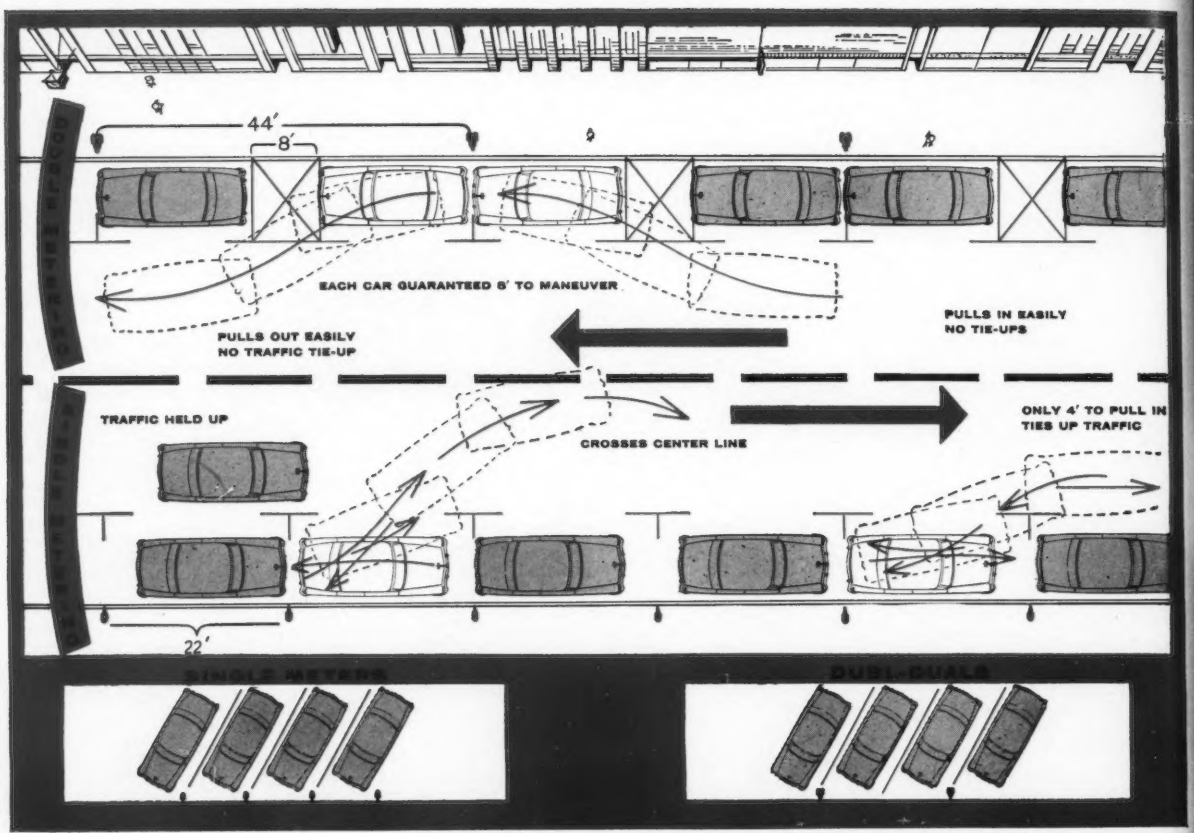

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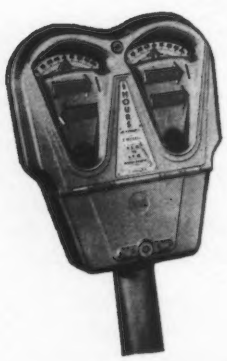

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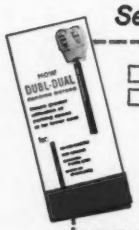

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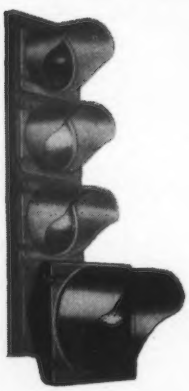

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Vol. 30 NOVEMBER, 1959 Number 2

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COVER: Aerial view of the Lunalilo Freeway (Route 72) and Panahou Street crossing on the island of Oahu. This completed section of the controlled access freeway is 1.7 miles long and has a designed capacity of 1500 cars per hour per lane. The freeway upon completion will serve as an east-west link with the CBD on the island.
— Photo courtesy of Hawaii State Highway Department

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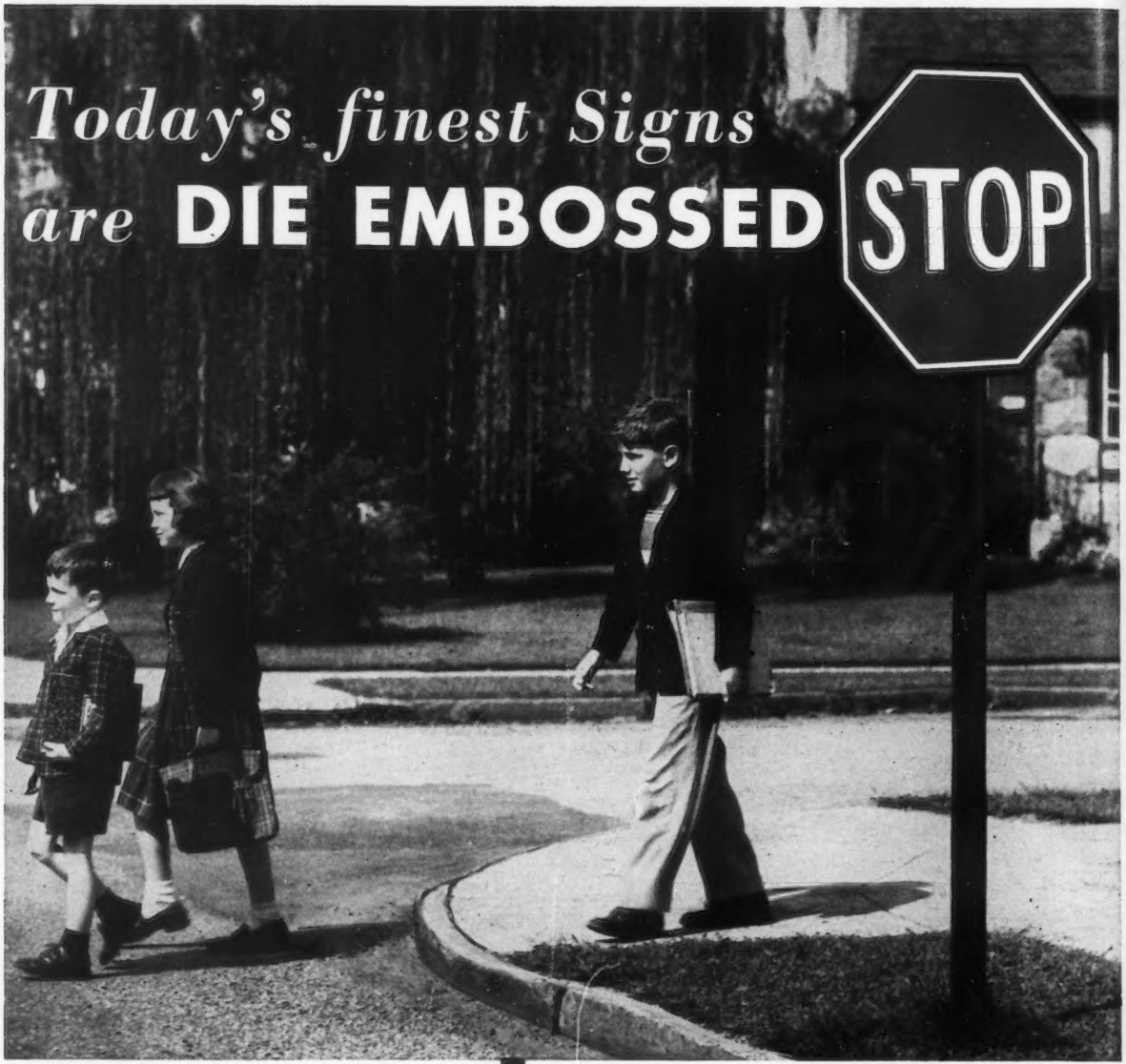

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Frankly Speaking . . .

A GREAT DEAL OF THOUGHT and work have been expended in the development of those sections of our Constitution and By-Laws relating to qualifications for membership. Actions have been taken and efforts will be continued to assure the highest standards of membership.

Much of the responsibility to appraise the qualities of an applicant now rests with the Membership Committee. The men of that committee have judged the applicants with honesty and fairness to the best of their knowledge.

However, the values of our standards and the considered appraisal of the Membership Committee and the Board of Direction are often nullified when we, who are asked to be a reference for an applicant, fail to discharge our obligation with honesty and fortitude. Many of us are inclined to support an applicant rather than to tell him that he is not qualified. This only leads him along the path to a future disappointment and a resentment toward the Institute.

When we submit a recommendation for an applicant we become an important part of the Membership Committee. Let us act with honesty to the applicant, to the Institute and to ourselves.

GORDON K. GRAVELLE
Vice-President, ITE

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The Matson Award Paper

Highway Safety—

A Primary Challenge to Traffic Engineering

By Charles W. Prisk
Director, Highway Safety Study
U. S. Bureau of Public Roads

This paper was presented in response to the 1959 Theodore M. Matson Memorial Award at the Twenty-ninth Annual Meeting of the Institute of Traffic Engineers, New York, New York, September 14, 1959.

I ACCEPT THE Theodore M. Matson Memorial Award with profound appreciation and humility. The high honor it does me might better be credited to those of you with whom I have worked in so many pleasant and productive capacities.

As a founder of the Institute of Traffic Engineers and its Vice President when he passed to his reward, Ted Matson characterized the best in our profession. Rarely, if ever, shall we know again one so fervently devoted to so many unselfish objectives. I was fortunate to have been among his hundreds of students at Yale, and also to have served as a companion Vice President of his in this organization.

His consuming concern was not so much for perfection of technical processes as for the improvement of the common good that stems from safe, efficient street and highway transportation. He was interested in people — and those among us who were fortunate enough to know him at close range shall not lose this memory. To Ted Matson, traffic engineering was fundamentally a way to a better life.

His practical mind and energies were stirred on many occasions by the challenge of street and highway accidents, which have their most meaningful impact on people, as distinct from material things. From his own brush with a gravely serious highway accident just a few miles to the south of where we are now assembled, I'm sure he was deepened in an already strong conviction that traffic engineering must have safety as well as facility for its target, and that the desires and needs of man himself must tower high above other factors significant to our profession.

What, now, do we know of these desires and needs? In the era that sees man adjusting to the automobile, one of the most primitive requirements is that of survival itself. Historically — since the advent of the motor vehicle more than one and a quarter million persons have died on the highway. Projections based on current trends in motor vehicle travel and death rates indicate that close to 700,000 more will die in traffic between now and 1975, making a total loss of 2 million persons for the first three-fourths of a century of our co-existence with the automobile. Without meaning to belittle by one iota the extensive strategy being directed toward greater safety in air travel, may I point out that the number of lives lost in scheduled and non-scheduled civil aviation accidents in the United States between 1933 and 1958 totaled 17,804. Any loss of life is admittedly tragic, but this total of 17,804 deaths accumulated during the entire 25-year era of civil aviation has been surpassed by deaths on the highway in the first 7 months of 1959 alone. On a passenger-mile basis, motor vehicle travel is 5 times more deadly than air travel.

Not as widely sensed as the motor vehicle death toll is the enormous personal injury and suffering that arises from traffic accidents. Projected for the same period, to 1975, we can estimate no less than 25 million persons who will be disabled by motor vehicle injuries during the next 16 years. On the average, this is about 1 out of every 8 in our population. Economic losses were reported to be $5.6 billion for the year 1958 and will swell to $9.5 billion in 1975, according to present estimates.

Most of you are reasonably familiar with the figures just cited. They not only document a major national problem; they are a primary challenge to traffic engineering. If our work is to improve the common good, we can make no more effective contribution to highway transportation than engineered safety.

Let's examine the traffic engineering responsibilities in the highway safety problem, first from the standpoint of our profession, then from our own positions as individuals in that profession. First — from the professional viewpoint — I believe that the classic Action Program orginating with the President's Highway Safety Conference needs recognition for what it truly is — an assembly of the best available, time-proved safety measures known to man. Many of you assisted in its development chiefly, I know, from the engineering side. The Action Program today needs some modernization and updating to encompass the new knowledge of the past decade and to adapt it for the new roads, new vehicles, new drivers, and the new environment of 1959 and future years. But the basic pattern of the Action Program which has been so successful will endure. I say, then, that as a profession we need to recognize the pattern in our traffic safety

efforts. It is what I like to call the 360-degree approach. May I remind you of the areas that are involved — traffic laws and ordinances, accident records, motor vehicle administration, public information, enforcement (traffic courts and police supervision), engineering (highway, traffic and automotive), organized public support, and research.

Under the banner af the Action Program we find doctors, lawyers, judges, businessmen, labor, motor vehicle administrators, statisticians, women's groups, highway officials, police, legislators, psychologists, educators, automotive manufacturers, public health officials, religious, civic and fraternal groups, insurance industries, welfare authorities, newspaper, radio, television and related media, and so-called safety experts of all kinds. This is a motley group, but their potential cannot be ignored. Few will be qualified by the specialized background experience and training of traffic engineering, but they are nevertheless going to be disposed to deal with safety problems in that area. We often hear the physician base his claim to authority on traffic safety issues on the close relation he has with his injured patient. Without meaning to be too facetious, I expect that an automotive mechanic could qualify himself almost equally well because of his knowledge of the repairs he makes on an accident-involved vehicle.

Clearly the traffic engineering profession cannot remain wholly aloof from the massive philosophy and programs of such groups. The more effective and ethically acceptable course is to search out avenues of intervention where sound engineering doctrine can be strategically implanted so as to augment the group achievement. The basic pattern of the Action Program of the President's Committee for Traffic Safety and parallel State activities need our better recognition and support, in addition to special technical assistance as they are reoriented and modernized for tomorrow's needs.

In quite another area, our profession has a second major responsibility for traffic safety. Beyond any question of doubt, the everyday work of traffic engineering has substantial effects on accident patterns and frequencies. These effects are not necessarily all in the desired direction. I suspect that many of you have had first-hand experience with unsuccessful practices where hazards were actually increased. Measures taken to facilitate vehicle flow on urban streets, for example, may bring a rash of pedestrian accidents. Delineation and lighting plans require careful and competent engineering analysis to avoid confusion and accident traps. The unthinking use of too many traffic controls is still another common situation that can be accident-productive. Somewhere at the core of our profession, we need the ever-active realization that most, if not all, traffic engineering operates either as a benefit or a detriment to safety.

One goal that is ever held before us but somehow has always eluded realization is that of improved accident records. I'm not entirely sure what efforts the traffic engineering profession has made on a broad front toward this objective, but from what I have seen, recent progress is limited indeed.

Traffic engineering has a unique function in highway transportation. Its sole concern is for safe, convenient and economic operation. With that function comes an inevitably large responsibility for traffic safety. To be worthy of the engineering label in accident-prevention, we need to recognize that the facts of traffic mishaps must one day be recorded, analyzed, and applied to work programs far more intensively than at present. The mounting financial responsibility considerations in accident reporting, coupled with the preoccupation with legal liability and violations data have added Wall Street and court room flavor, but not much engineering enlightenment to the accident report of recent years. The fundamental deficiencies in accident records are widespread and will increasingly hamper engineering treatments until some reform can be effected.

A project on traffic engineering surveillance has just been initiated by the American Association of State Highway Officials' Committee on Traffic in cooperation with the State highway departments and the Automotive Safety Foundation. The idea of traffic engineering surveillance has some important potentials, we think, because it will establish a means for immediate identification of locations where some action is required. Most important, it will hoist a danger signal sufficiently in advance of an emergency so that traffic engineering will have the opportunity to plan their activities rather than running from one brush fire to the next, vainly attempting to satisfy complaints from a vocal public. Obviously, motor vehicle accidents will be among the criteria. The States of Oregon and Washington have had good success with a mileage log showing local names of roadside establishments and other control points along the highway as a means of enabling police to locate accidents accurately. From the engineering viewpoint, the factor of precise location alone can often make or break the success of traffic engineering treatment.

Closely associated with the responsibility I have just identified is the field of traffic safety research. The traffic engineering profession is characterized far more by those who are engaged full time with the management of traffic than by those who engage in research, either in behalf of the safety or the facility of traffic movement. This is evidence of course of the basic importance of keeping traffic in motion.

Charles F. Kettering once observed that "Research is an organized method for keeping you reasonably dissatisfied with what you have," and this may be still another reason for the relatively small amount of traffic safety research. Whatever the motivation, research in traffic safety has not been a very common distinction of the traffic engineering profession.

During the various hearings held by the House Subcommittee on Health and Safety, the testimony presented indicated that research expenditures for each death due to heart disease amounted to $87, and for cancer, approximately $360. Although no comparable figures can be assembled for traffic safety research because of its diverse nature, authorities are well agreed that expenditures are considerably below these levels.

The hard economics that are an inescapable part of practically all highway and traffic engineering decisions are gradually leading toward more emphasis on highway safety research. A substantial number of the State highway departments have been cooperating with the Bureau of Public Roads on work of this nature over a period of years, and during the past three years, the National Institutes of Health have made research grants for work in the accident prevention field, much of this dealing with human factors in motor vehicle accidents. Effective progress in human engineering research on

(Continued on page 42)

Traffic Controls in Parking Ramps

By Peter D. Schwarz, P. E.
Rochester, New York

HAVE YOU driven into a parking ramp lately and found it difficult to locate a parking space? Have you driven throughout the entire structure on a busy day, finding no space available and reluctantly sought space elsewhere? This situation can be avoided:

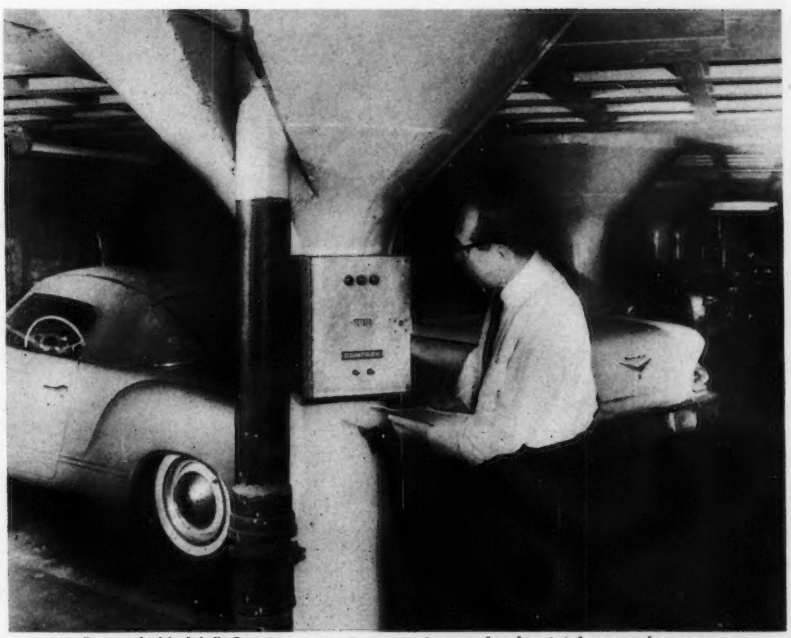
At the municipal parking ramps in the City of Rochester, New York, the attendant has, at all times, full knowledge of the number of available spaces. A computer system keeps track of the total number of spaces in the building and the number of available spaces on each level, warns the attendants when to close off the ramp and also operates signals to direct traffic to the nearest available level without unnecessary circling of floors.

Preventing internal traffic tie-ups avoids the possibility of congestion extending into the street and causing major traffic problems, and good public relations are maintained.

Rochester has three municipal parking ramps; the first being a three level staggered deck structure outside the central business district, having a capacity of approximately 500 cars. It was opened in the Fall of 1956.

The second and third ramps, located in the heart of the shopping district, opened in March 1958, and March 1959, respectively, are eight-floor structures with capacities of over 500 cars. Both are adjacent to large department stores, one having access directly to a department store, on five of the eight levels. These ramps are operated by the city and rates are kept reasonable and competitive to neighboring lots.

All ramps are well lighted, have wide entrances and exits, and large parking stalls. All these features attract even the most timid driver. High speed elevators enable the shopper to reach the street or his car quickly. Each parking stall is supplied with a parking meter which eliminates a cashier and a checker at the exit. It also allows vehicles to exit into the street at a high rate—clocked at an average of ten cars per minute during peak periods.

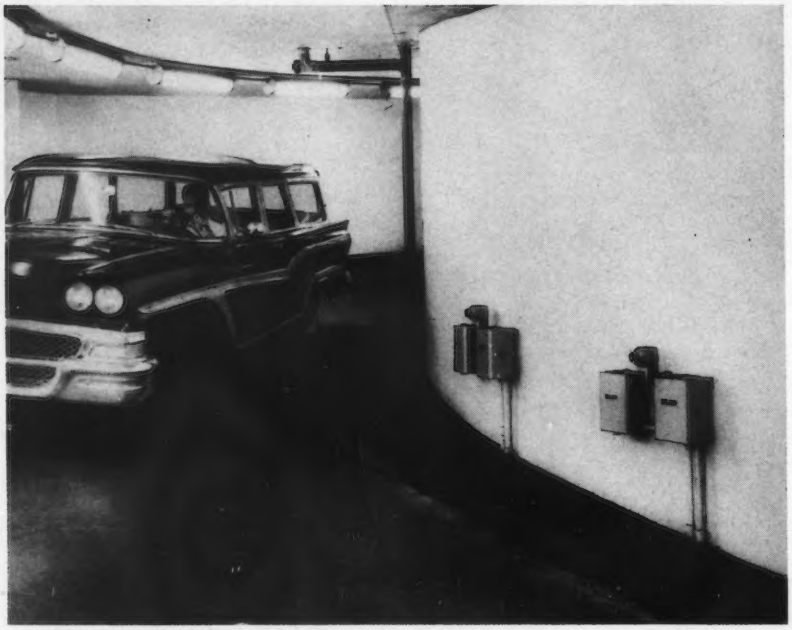


Rampark Model 5 Counter on post near entrance showing total spaces in ramp.

Accurate computer equipment has required considerable development and experimentation. The first two structures used the conventional non-directional pressure sensitive treadles, such as is common in streets for traffic counting and signal control. However, it was soon apparent that these treadles failed to give the best accuracy for traffic detection in parking ramps.

Treadles require confined and straight traffic flow. Wide ramps with large turning radii, which are desirable to attract the timid driver and speed traffic flow, allow the driver to miss the detectors or go over at odd angles and, thus, register an incorrect count. Relocation of these treadles was next to impossible, due to the floor slab construction.

In the third ramp, it was decided to use photoelectric cells. It was predicted that pedestrians would hesitate to walk in the ramps, particularly above the second level, as the entire semi-circular ramp could not be viewed from one end and no walkway was provided. A



Photoelectric detectors in ramp energize counters. Note, two cells are used to prevent pedestrians from affecting count. Light sources out of picture to left.

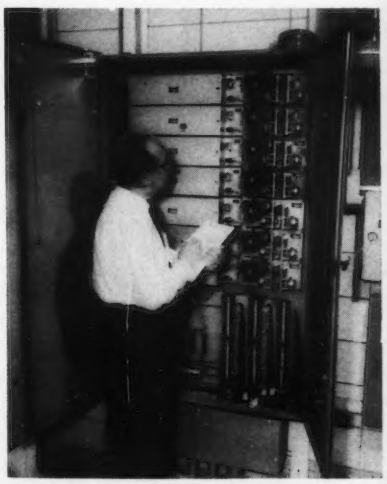
single photoelectric beam was supplied on each ramp, from level two up, and two photoelectric beams, spaced four feet apart, were placed in the ramps between levels one and two. A single vehicle going up to two, or down to one, would cut the two beams simultaneously, whereas a single pedestrian would cut the beams one at a time, and not register.

The computing equipment, using photoelectric detection, has been in operation since March 1959 with excellent results. Attendants make an actual count of each level and compare them with the computer. These checks are continually in agreement, except in rare instances, where a vehicle may occupy portions of two stalls.

In both eight floor ramps, the computing equipment counts from level two up. It was decided not to count the first level, as the main entrances and exits were considered too wide for accurate detection by treadles, and photocells were ruled out because of the pedestrian traffic. Further, there were drive-in parking stalls just beyond the entrance and vehicles backing out of these stalls would back through the detection zone and thus cause error.

In order to make a complete and accurate computer system, a detector must have the following characteristics:

1. It must be pedestrian proof.
2. It must detect the vehicle, regardless of angle of travel through detection zone. Counting axles has proven inaccurate; therefore, the detector should preferably count the car body or, as an alternate, all four wheels.
3. It must be able to cover wide entrances and wide exits.
4. If the entrance or exit is wide enough for two vehicles, the detection system must be able to distinguish between one and two vehicles in the detection zone.
5. The detection system must register properly, even though vehicles can back through or into the detection zone when leaving adjacent parking stalls.
6. The detection system must still register properly two vehicles following in close succession.



Rampark Model 4 Traffic Counter. Counts cars on levels 2 thru 8. Counters operate directional signals on each level.

Typical signal directing traffic up ramp when level is full, X is red, ← green.

With these characteristics in mind, two detection systems were developed; one system for a two lane, one way exit from a parking area, and the other system for a two lane one way entrance where vehicles will back into or through the detection zone.

The first detector system is called the multi-lane non-directional vehicle

(Continued on page 56)

Progress in the Twin Cities Area Transportation Study

By Stephen George, Jr.
Assistant Director—Traffic
Twin Cities Area Transportation Study
Minnesota Department of Highways

In the Twin Cities metropolitan area, 13th largest in the United States, it is recognized that an adequate system of streets and highways is a basic requirement to the economy and welfare of the area. Within the given study area, over 1,350,000 people make 2,700,000 trips daily to work, to shop, to do business, to deliver goods or to visit recreational areas. In and around the existing 411,000 dwelling units, over 400,000 automobiles and 60,000 trucks provide the basic means of moving people and goods. Population has been growing at the rate of over 200,000 per decade. Increases in population and motor vehicle registration and use all contribute to increased transportation requirements.

In order that the future plan and design of a system of expressways and major arterials may be based upon factual information, the Minnesota Department of Highways, in cooperation with the U.S. Bureau of Public Roads has organized the *Twin Cities Area Transportation Study*. The Study Director is Chester C. Burdick, formerly Planning and Programming Engineer for the Bureau of Public Roads. Assistant Director in charge of Analysis is Russell B. Adams.

The Study Area

The 18-month highly accelerated Study, initiated in June 1958, has been conducting various surveys throughout a 900 square mile area in and around the Twin Cities, as shown in Figure 1. The six-county study area includes Ramsey County and parts of Hennepin, Carver, Anoka, Washington and Dakota Counties. Ninety-nine separate governmental subdivisions are located within this study area.

General Concept

The various surveys, completed or underway, will determine and analyze the magnitude of all trip movements made by every means of transportation during an average weekday. The Study will also make a detailed inventory of existing land uses and will predict future development of land uses. All area traffic movement data will be combined with detailed land use data and the future forecasts of population, houses and land uses. Then a resulting plan of traffic requirements for adequate circulation of people and goods for the next 20 years will be developed and tested.

To augment the findings, a program will be developed to provide the maximum of immediate benefits from the continuing street and highway improvements within the funds currently available or deemed necessary. Since any plan may become obsolete, the means of keeping the plan and program of improvements current on a year-to-year basis is planned. By this process, predicted changes in land use and travel needs can be currently checked against actual changes. Thus, a long-range plan and a current program which are in step with the needs will be available at all times.

STUDY ORGANIZATION

The entire study has been greatly accelerated in time by reducing the study period to approximately 18 months of extensive work-programming. This concept was paramount for the metropolitan area in order to use the pending conclusions and recommendations as expeditiously as is practical and possible to complete. To carry out the transportation study, a separate and independent organization was created within the Traffic and Planning Division of the Minnesota Department of Highways. This decision allowed normal operation of the Division relative to its day-to-day operation and allowed a separate staff to spend full time on the study. All study personnel were hired under State Civil Service procedures for the duration of the study.

During the basic data collection stage, a peak of 136 people were utilized, combining the talents of engineers, geographers, planners, research analysts, field interviewers, traffic recorders, clerks, etc. At present, 75 employees are being utilized in the data analysis, data processing and application phases, as shown by Figure 2 of the present organizational chart.

PROJECTS COMPLETED

The basic data collection stage was completed by December 1, 1958. Major field inventories included the following: 38 personnel were utilized making 20,230 home interviews of 5% of the total dwellings; 13 personnel were used in making 4,700 truck interviews of a 10% sample of trucks and 225 taxi interviews of a 50% sample taxi vehicles, and 20 additional personnel were utilized in external interviews and traffic classification counts at 39 external stations and 14 screen line stations. Over 264,000 vehicles were counted crossing a 22 mile screen line, indicated in Figure 1, and 126,000 vehicles were observed crossing the cordon line during a 16 hour period.

The land use inventory utilized 12 field personnel, classifying all land uses within political units, census tract and blocks, and by quarter square

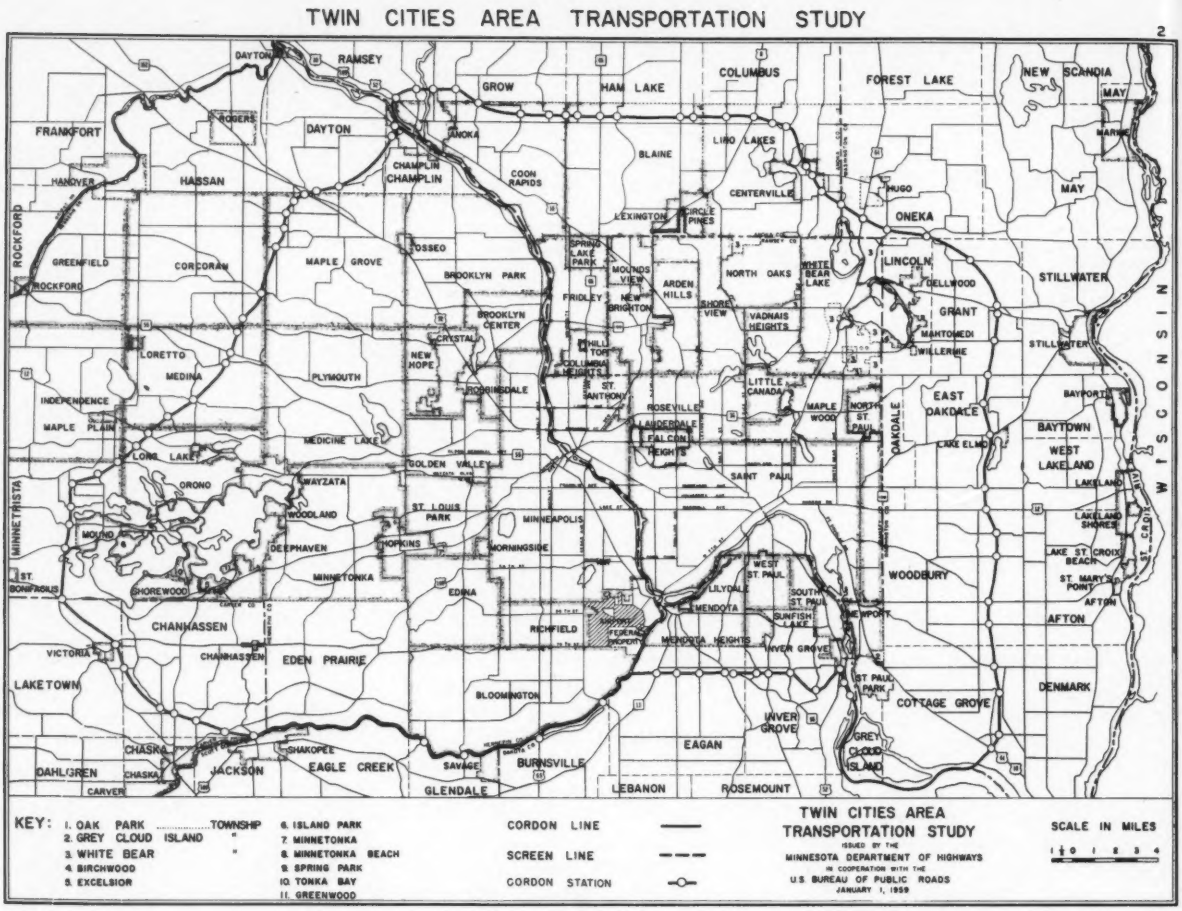


Figure 1

miles and 2276 subzones. Necessary coding, editing, tabulating and analyses followed all of the above field surveys.

Detail study of past trends and future estimates of population, households, persons per household and motor vehicle registration have been completed. The population forecasts have been made in cooperation with the Twin Cities Metropolitan Area Planning Commission.

The importance of land use as related to traffic use and forecast cannot be over-emphasized. The *Twin Cities Area Transportation Study* has attempted to make as extensive a land use inventory as possible. Traffic-Land Use generation relationship will be fully explored to assist in the technique of future forecast of traffic.

PROJECTS UNDERWAY

Street Classification

Under development presently is the classification of the existing primary

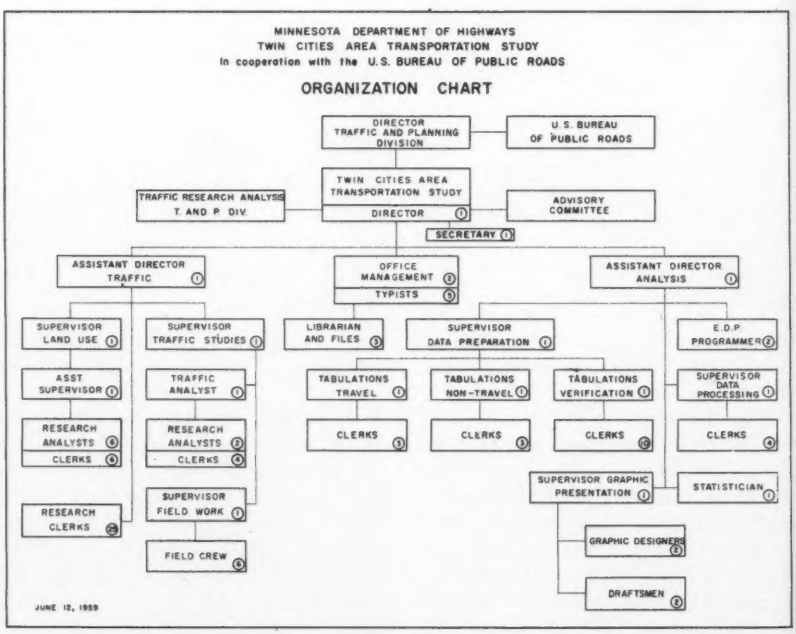


Figure 2

street and highway system by functional use as suggested by the National Committee on Urban Transportation. Volume, capacity, speed, marginal friction, access rights, type of traffic, transit routes and existence of traffic control devices are some of the criteria being used. Underway also is an inventory of existing transportation facilities, basically from existing data supplemented by field inventory where necessary. The first purpose of such an inventory is to determine traffic carrying ability of the present street system. Secondly, effects of the use of a route by changes in volumes and densities will be explored in order to assign traffic to routes more realistically.

Primary Arterial Study Plan

Various Primary Arterial study systems are also being prepared; such as the Existing, Committed and Proposed, prior to final zoning and application of traffic assignment techniques to the study systems. The study systems will include both Freeways and Major Street and Highways.

Land Use Forecasts

Land use forecasting by Twin Cities Area Transportation Study staff in cooperation with Twin Cities Metropolitan Planning Commission, St. Paul Planning Board, Minneapolis Planning Commission and the other individual municipal jurisdictions is nearly complete. 90% of the final dwelling unit distribution of the increase forecast for 1980 is completed on a subzone basis. Extensive study and analysis is developing industrial, commercial and other related future land use forecasts. The relationship between the employees by floor area use classification and the number of square feet in all given establishments is being thoroughly investigated. This phase of the study will finally develop growth factors by unit area for the entire 900 square mile study area.

Other Minor Inventories and Forecasts

In order to effectively appraise a transportation plan and implement the preparation of a definite program of highway improvement, minor inventories of employment, general economic growth, finance and administration will be undertaken. Coordination of all traffic forecasts and the sound basis for future growth and development in the metropolitan area is important.

Traffic Assignments

A thorough examination of available Bureau of Public Roads', Fratar and various other electronic computer programs for traffic forecasting and assignment is also presently underway by the Twin Cities Area Transportation Study programming section. While various summary tabulations of existing available data are being processed, triangular tables of trip interchanges are also being prepared and preliminary examinations indicate relative uniform trip expansion factors by mode of travel.

A series of traffic assignment steps will shortly proceed from the assignment of present traffic on the existing street system to the assignment of 1980 forecast trip on a finalized Freeway and Major Street Arterial Plan developed to meet the adequate traffic circulation and movement needs for the next 20 years.

Research in the development of a gravity model or multiple regression process of forecasting future trips and their pattern will not be overlooked. Only through such means can sound current maintenance of both a transportation plan and a land use forecast, as affecting traffic requirements, be kept current.

Summary

With a premise that factual data is the only source for developing a sound transportation plan, the *Twin Cities Area Transportation Study* has completed the first year of its accelerated operations within a 900 square mile study area. Projects completed included an internal-external origin and destination study, a land use inventory, and population and dwelling unit forecasts. Additional projects underway are the functional usage classification of the present street system, development of a primary arterial study plan, land use forecasting, assignment of present and future traffic to the present and future freeway and major street arterial plans and urban transportation research between land use and traffic. A program for implementing the results is also planned. With these facts, the Twin Cities Area will be greatly advanced to finalize its future transportation planning program.

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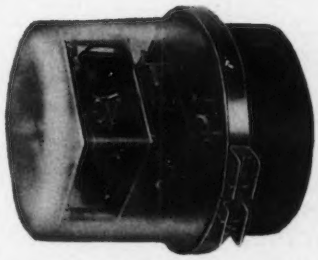
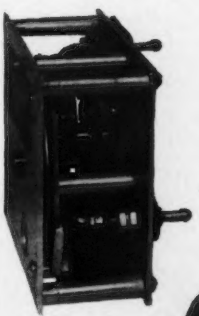
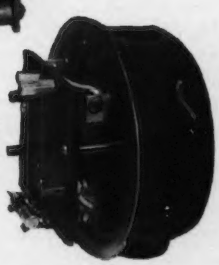


Time-O-Matic Jack Mounted Flasher in Standard Meter Case

Single or two circuits, every model with built-in eliminators. Available with standard meter case (above) or separately with Jack mounting panel (below).



Time-O-Matic Jack Mounted Flasher Only



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ITE MEMBERSHIP SURVEY—1959

This report was developed by a special committee of Department No. 2 of the Institute of Traffic Engineers under the chairmanship of W. L. Carson, and was presented at the Annual Meeting in New York in September.

ONE OF THE major purposes of the two-day Workshop held by the Institute of Traffic Engineers in May of 1959 was to appraise the professional qualifications, status and activities of Institute members. In order to secure adequate and reliable factual information on which Workshop discussions could be based, and recommendations made, the Executive Secretary of the Institute circulated a questionnaire among all ITE members except those employed in foreign countries. While time did not allow a complete analysis of the wealth of data thus obtained, a basic summary of the information presented on returned questionnaires was prepared and made available at the Workshop. In consideration of the extent and type of information obtained in the survey, Workshop participants recommended that a more thorough analysis of the questionnaire data be made and that a project committee of the Institute be appointed for that purpose.[1] This was subsequently effected through action of the ITE Technical Council at its meeting on June 16, 1959 when Committee 2G — Membership Survey Committee was authorized. Because of the nature of the project, it was decided that the Committee should be composed entirely of ITE members from the Washington (D.C.) Section of the Institute.

The Membership Survey Committee has understood its charge to be that of evaluating and presenting, in meaningful form, information and relationships obtainable from survey data that are of significance and importance. The Committee has made no attempt to specify deficiencies in the status of traffic engineers or to make recommendations for the alleviation thereof. It is felt, however, that the analyses presented in this report will be of value to the Institute and its members —particularly in their endeavors to appraise and further the stature of the traffic engineering profession.

1. "Recommendations for Action—A Report of the Highland Park Workshop Conference," Institute of Traffic Engineers, June 24, 1959.

Representativeness and Validity of Survey Sample

The response of ITE members to the questionnaires was excellent. Of the 1,215 cards distributed, 731 (60%) were filled out and returned. Elimination of replies from persons not in the three basic grades of the Institute, cards inadvertently sent to persons employed in foreign countries, and those on which no information of value was presented left 699 completed questionnaires for analysis. Since not all cards contained answers to every question, there is a variance in the number of replies on which individual tabulations have been based—ranging from 668 to 695.

Insofar as it was possible to determine, there is no bias of note in the survey sample. Checks were made as to any bias the sample might contain with respect to ITE members' age, District, and grade of membership. The representation of ITE grades and Districts in the sample was found to be quite consistent with that indicated by records at ITE Headquarters.

Individual District representation in the survey ranged from the ten per cent of all replies that came from members in District 2 to the 24 per cent that came from District 6 members. According to the roster maintained at ITE Headquarters, 13 per cent of ITE members are in District 2, 24 per cent in District 6.

The representation of each of the three basic ITE grades in the survey sample also compares favorably with that shown by ITE Headquarters records. Of the completed questionnaires returned, 25 per cent came from Junior members, 46 per cent from Associate Members and 29 per cent from Members. The ITE Headquarters' roster indicates that 22 per cent of the membership are Junior Members, 46 per cent Associate Members, 27 per cent Members, while 5 per cent are classified other than in the three basic grades.

Due to the rather striking nature of the age distribution figures that evolved from tabulation of questionnaire data, ITE Headquarters was requested to provide age data on the entire membership. Comparison of the age data gleaned from ITE files with that obtained in the questionnaire survey indicated that the sample is not significantly biased with respect to age representation.

Response to the questionnaire was highest for ITE members in the 26-30 year age group, with over 79 per cent submitting completed cards. As might be expected, response was lowest from members 61 years of age or older, only 31 per cent of whom returned cards containing useable data.

Age Distribution

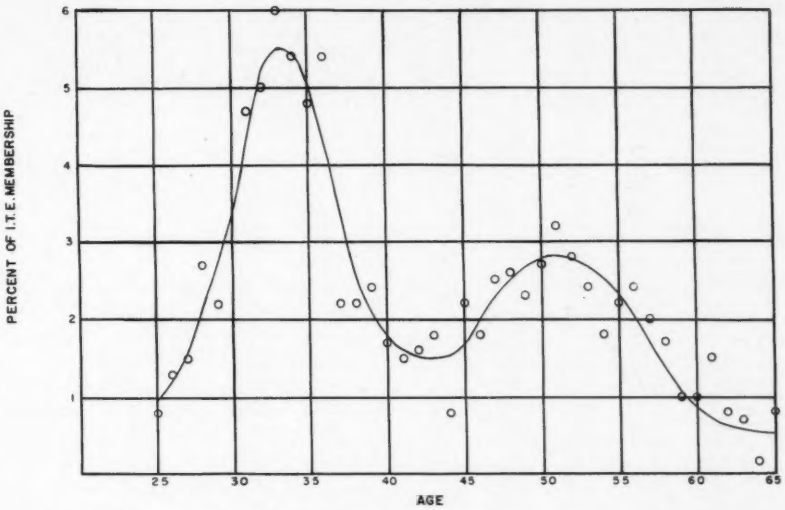
Analysis of the age distribution of the ITE membership produced some rather interesting, if not surprising, figures. The median age of the Institute's membership is 38,[2] and nearly one-third of the members are between the ages of 30 and 37. As Figure 1

2. Median age of ITE members covered in the survey sample is 37. For the age distribution analysis, data are for the entire ITE membership. In all subsequent analyses involving age of members, data from the questionnaire survey only have necessarily been used.

indicates, there is an apparent dearth of members (86) who are 40 to 44 years of age — they constitute only 7.4% of the membership. There are also very few young persons in the Institute, with only 49 members (4.2%) being 27 years of age or under.

Although it has little statistical value (because of the bimodal age curve), the median age of ITE members appears to be somewhat higher than that found in other engineering professions. Information contained in a recent report[3] by the Engineers Joint Council, based on a questionnaire survey of some 1500 employers in industry and government, indicates that the median age of practicing engineers is 33. The EJC report also shows that approximately 10% of the 185,152 industry- and government-employed engineers covered in the Council's survey were 25 years of age or under. Only 1.5% of ITE members are in that age classification. About 25% of the engineers in the EJC survey were 29 years or younger, in contrast to the 9.1% of the ITE membership who fall in that category.

AGE DISTRIBUTION OF I.T.E. MEMBERSHIP*



* DATA BASED ON I.T.E. HDQTRS. RECORDS AS OF AUGUST 12, 1959

Figure 1

Education

As indicated in Table 1, ITE members as a whole seem to have the educational requisites for their profession. Eighty-seven per cent have a college degree, 67 per cent a degree in civil engineering. Among the members who have a degree other than, but not in addition to, one in civil engineering, a degree in electrical engineering is most common. A seemingly high proportion (46 per cent) of Institute members have taken graduate work in traffic engineering.

Table 1

FORMAL EDUCATION OF ITE MEMBERS

Education	% of Members
High School only	13
Civil Engineering Degree	67
Other Degree	20
	100
Graduate Work in TE	46

Field of Employment

Table 2 indicates that a preponderant majority (71 per cent) of ITE members are employed by some level of government. More than half of the membership hold positions in state highway departments or in cities of over 250,000 population. Among the basic fields of employment (as classified on the questionnaire card), those of "industry," "association" and "education" have about equal numerical representation in the Institute. Cities of less than 250,000 population are the employers of only 12% of Institute members, while Federal highway agency employees constitute just 2% of the membership.

Table 2

FIELD OF EMPLOYMENT OF ITE MEMBERS

Field of Employment	% of Members
Federal Highway Agency	2
State Highway Department	32
County Highway Department	3
City over 250,000 population	22
City, 100-250,000 population	7
City under 100,000 population	5
Industry	3
Education	4
Association	3
Consultant	13
Other	6
	100

Professional Registration

According to information reported on the questionnaire cards, 65 per cent of all ITE members are registered professional engineers. As shown in Table 3, about one-half of Institute members in their late 20's; two-thirds of those in their 30's, 40's, and early 50's; and four-fifths of those over 55; are registered. It should be noted that no indication was given on the questionnaire card as to how members who are registered as "engineers-in-training" should reply to the question on registration status and that the percentage figures cited in Table 3 might therefore be somewhat higher than justified.

Table 3

PROFESSIONAL REGISTRATION OF ITE MEMBERS

Age Group	% Registered
26-30	49
31-35	65
36-40	63
41-45	69
46-50	67
51-55	68
56-60	83
61-65	85
All Members	65

Status of Members

Presented in Table 4 is a summary of the status of ITE members according to their membership grade. The differentials among grades for the various categories shown seem generally proper and consistent. Of particular note, however, is the considerable difference between the status of Associate

3. "Professional Income of Engineers—1958," copyright 1959, Engineers Joint Council.

TABLE 4

STATUS OF ITE MEMBERS BY MEMBERSHIP GRADE

ITE GRADE	AGE (median)	PERCENT REGISTERED	YEARS IN GRADE			YEARS IN T. ENGR.			Level of Responsibility (median)
			Lower Decile	Median	Upper Decile	Lower Decile	Median	Upper Decile	
Junior	30	47	1	3	7	2	4	8	5
Associate	37	61	1	4	10	5	9	19	7
Member	51	85	2	9	18	10	19	29	8
All Grades	37	65	1	4	14	4	10	25	7

Members and that of Members in all categories except Level of Responsibility. Interestingly, about 10 per cent of Members have been in traffic engineering work for 29 or more years—or approximately since the Institute of Traffic Engineers was founded in 1930.

If it is possible to determine a "typical" member of the Institute of Traffic Engineers, it would seem that he is a 37-year-old registered engineer at a high level of responsibility, has been engaged in traffic engineering work for a decade, and has been an Associate Member for four years.

Level of Responsibility

Judging from the information provided by survey respondents, ITE members generally have reached high levels of responsibility and have done so in a relatively short period of time. As shown in Table 5, 55 per cent of the members reported that they hold a position equivalent to a Grade 7, 8, or 9 level of responsibility. As established and defined by the American Society of Civil Engineers, these are positions requiring a high degree of capability and involving the performance of duties having considerable importance. They correspond to Federal employment classifications GS14 through GS16. Eighty-three per cent of the ITE membership indicated that they are in or above a Grade 5 level of responsibility. Grade 5 positions normally involve considerable supervisory responsibilities and correspond to Federal classification GS11.

Comparisons of the level of responsibility of ITE members with their age (Figure 2) and with their number of years in traffic engineering (Figure 3) indicate that traffic engineers have been able to attain positions of increased responsibility quickly and steadily. The traffic engineer who is under 26 and at a Grade 3 level of responsibility reasonably can expect to reach Grade 5 within five years and to increase his professional grade once every additional five years up to age forty-one and Grade 8.

Correspondingly, ITE members have consistently reached higher levels of responsibility as they have acquired more years of experience in traffic engineering. Those Institute members in Grade 4 who have had two years of experience can anticipate reaching

Table 5

LEVEL OF RESPONSIBILITY OF ITE MEMBERS

Level of Responsibility	% of Members	Cumulative %
2	1	1
3	5	6
4	11	17
5	15	32
6	13	45
7	16	61
8	22	83
9	17	100

Grade 5 within two years, Grade 6 within four, Grade 7 within eight, and Grade 8 within 14, if they remain in the traffic engineering profession.

Higher levels of responsibility for ITE members are accompanied by correspondent salary increases. Figure 4 shows that the salaries of Institute members are commensurate with their degree of responsibility, the median annual salary ranging from $6,000-$7,000 for members in a Grade 2 level of responsibility to $12,000-$14,000 for those in Grade 9 positions. Members in Grade 6 have a median salary of about $9,500 per year, while most of those in Grade 7 receive an annual salary that is in the $10,000-$12,000 bracket. It is interesting to note the substantial difference ($4,000) that exists between the "upper decile" salaries for Grades 7 and 8, as compared to the approximately equal median and "lower decile" salaries for those two grades.[4]

Salaries

In the belief that salaries and their relation to certain factors including age, field of employment, professional registration status, and education are of particular interest, considerable attention was given thereto in analyzing the survey data. As shown in Figures 5

LEVEL OF RESPONSIBILITY OF I.T.E. MEMBERS

BY AGE GROUP

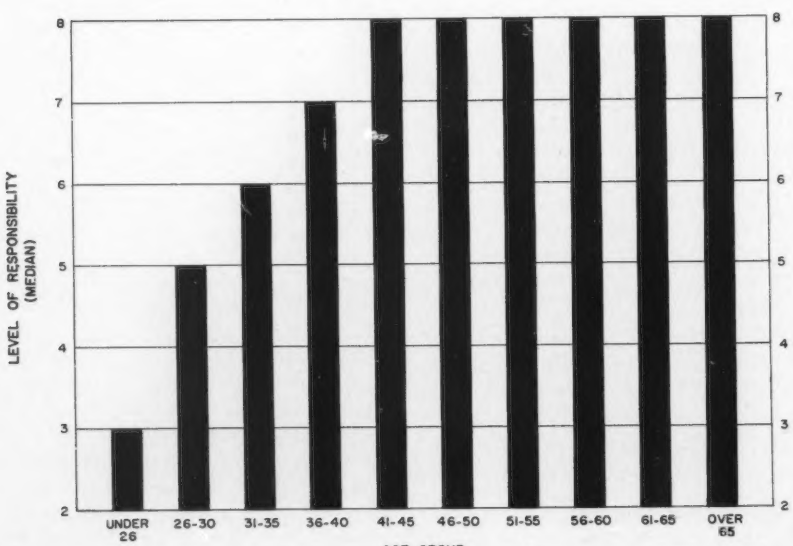


Figure 2

4. In compiling salary data, it has been necessary to assume that the salaries of reporting members are equally distributed between the two levels of the questionnaire salary bracket involved. The propriety and validity of this assumption is, of course, subject to question in some instances.

through 10, a series of trend curves were developed using age as the independent variable and annual salary as the dependent variable. Because of the limited size of the survey sample and the respondents' age distribution, it was necessary to use five-year age groups in developing the various relationships. This grouping, however, still resulted in data of questionable reliability for ages under 26 and over 60 —due to the very small number of questionnaire respondents in those categories. In addition, it was impossible to determine the range and distribution of salaries in excess of $20,000 — all fell in the "over 20" salary classification on the questionnaire.

Salaries by Age

As can be seen from Figure 5, the median annual salary of Institute members increases consistently and steadily with age—being approximately $7,000 at age 25; $8,000 at age 30; $10,000 at age 40; and $11,000 at age 50. It appears to level off in the neighborhood of $11,500 at age 53. The lowest decile of income increases more slowly than the median salary after age 32 and remains about $2,800 under the median salary after age 46. The top decile salary rises sharply after age 37 and is about $8,000 per year above the median income at age 52.

Analysis of salaries for members of individual Districts indicates that the salaries of District 2 members are generally higher than those of members in any other District, while salaries for District 5 members are somewhat lower.

In Figure 6, the salary range of ITE members is compared to that of the National Society of Professional Engineers' membership and to that of civil engineers in NSPE.[5] In comparing the salary ranges, it is important to note that the NSPE data[6] are based on a questionnaire survey of some 19,000 NSPE members in which a total of only 22 per cent of the respondents were employed by Federal, state, county or municipal governments as contrasted to the 71 per cent of respondents in the ITE survey who are employed by government agencies. Thirty-five per cent of engineers reporting in the NSPE survey were employed by private industry, 21 per cent by consulting firms. As noted previously, only 3 per cent and 13 per cent of the ITE survey respondents were in industry and consulting, respectively. It should also be noted that all respondents in the NSPE survey were registered professional engineers, while the curve for ITE members in Figure 6 includes both registered and non-registered members.

These factors basically account for the generally lower salaries shown for ITE members. The salary increase rate up to age 40 is somewhat greater for NSPE members, but the salary trend for ITE members seems to show greater strength beyond that age. This relation appears to hold true with regard to the total NSPE membership as well as to that Society's civil engineers.

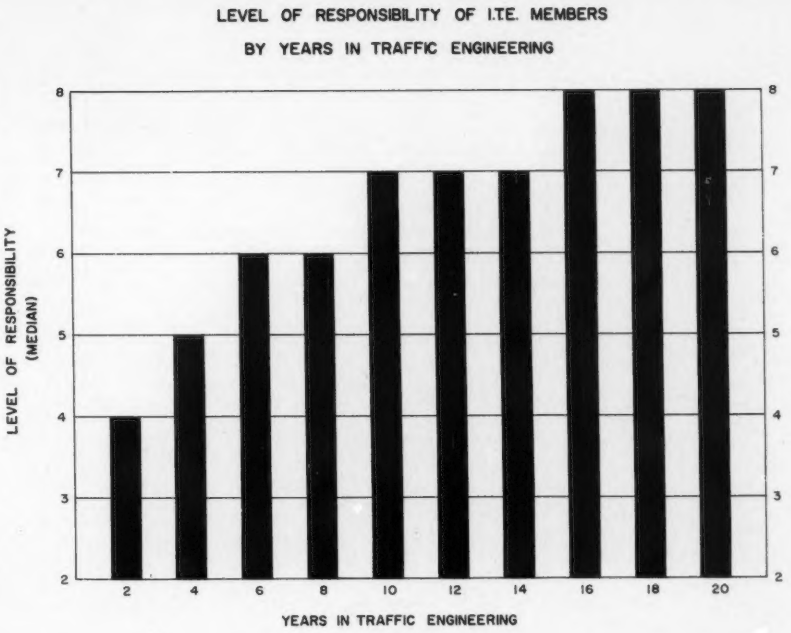


Figure 3

Salaries by Field of Employment

Figure 7 shows the salary ranges for ITE members in the various fields of employment as reported in the survey. In order to secure adequate data for determination of curves, fields of employment were grouped as denoted in the legend of Figure 7. Checks of the salary data for individual employment fields indicated that these are proper

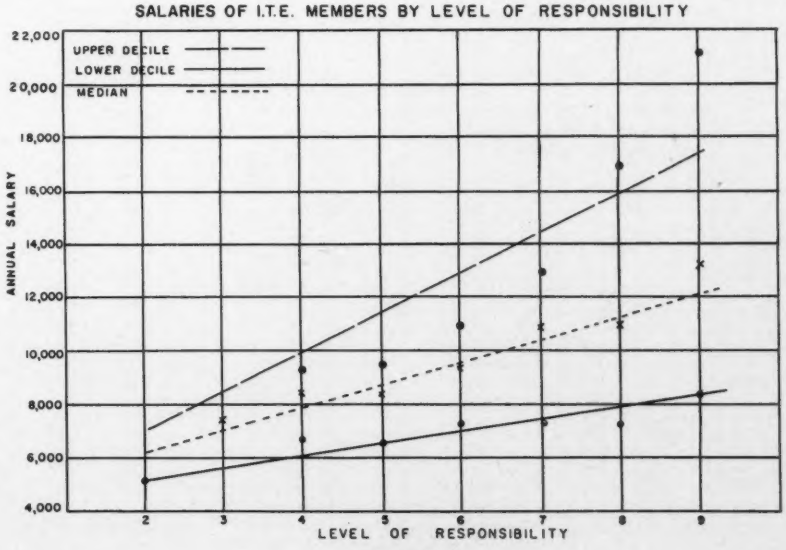


Figure 4

5. In compiling the data for Figure 6, it was assumed that traffic engineers graduate from college and enter their profession at age 23, the median age of graduating engineers.

6. From the report "Income and Salary Survey, 1958," National Society of Professional Engineers, July, 1959.

SALARY RANGE OF I.T.E. MEMBERS BY AGE

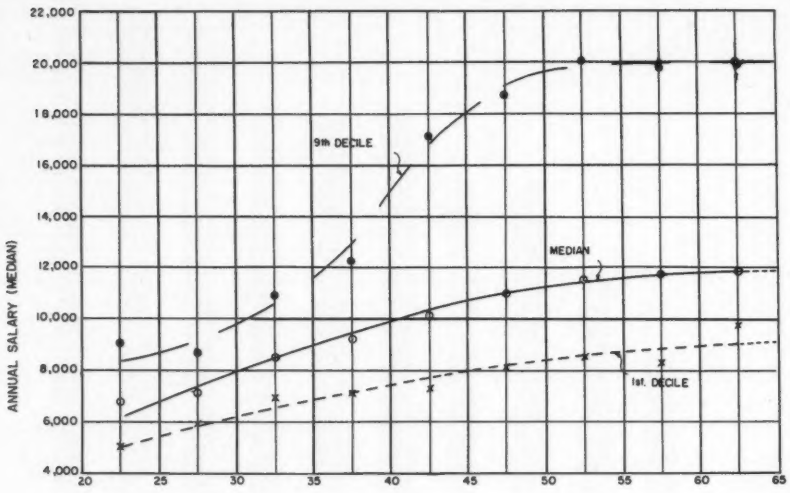


Figure 5

groupings and that the fields within the groups are properly correspondent.

As anticipated, salaries of persons employed by non-governmental organizations are considerably higher than those of government employees. The median income for the consultant-industry-association group is approximately $1,500 above the median salary for all Institute members at age 30; $3,600 at age 40; and $5,000 at age 50. The median annual salary for Federal and state highway employees over age 40 closely parallels that for ITE members employed by cities of over 250,000 population, both being about $600 below the median for all employment fields. Institute members in cities of 250,000 population or under have a median salary consistently lower than those in the other designated fields of employment—running $1,000 to $2,000 under the median for all fields.

A comparison of the salary of ITE members with those of other engineers employed by state and local governments suggests that traffic engineers have a definite salary advantage over other engineers in government employ. This is shown in Figure 8, which is based on salaries of state highway engineers and of all engineers in local government as reported in the Engineers Joint Council survey of previous reference. These comparisons indicate that government-employed ITE members generally have a higher salary than that of other engineers employed by either state highway departments or local governments. The salary differential varies but at age 47 is about $2,000 for ITE members in the employ of states and large cities; $1,000 for Institute members employed by cities of 250,000 or under.

Due to the small number of ITE questionnaire survey respondents who are in the fields of industry and education, it was possible to use only the EJC survey data relating to government agencies in comparing salary information from the EJC study with that from the ITE survey.

COMPARISON OF MEDIAN SALARY OF I.T.E. MEMBERS WITH MEDIAN SALARY OF N.S.P.E. MEMBERS

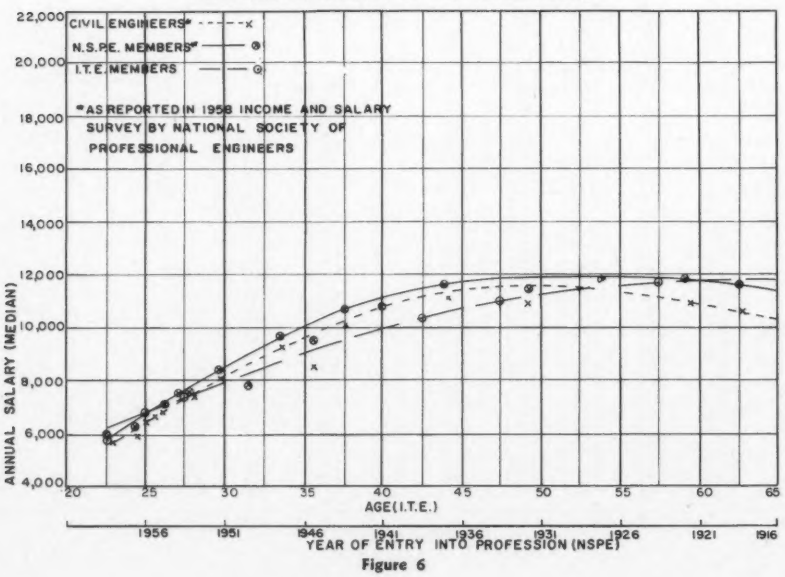

CIVIL ENGINEERS*
N.S.P.E. MEMBERS*
I.T.E. MEMBERS
*AS REPORTED IN 1958 INCOME AND SALARY SURVEY BY NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
ANNUAL SALARY (MEDIAN)
AGE (I.T.E.)
YEAR OF ENTRY INTO PROFESSION (NSPE)

Figure 6

Salaries by Education

Shown in Figure 9 are a series of curves indicating the salary trends for ITE members according to the extent and type of formal education they have received. It is evident that members who have received only a high school education do not fare nearly as well salary-wise as those who obtained a college degree. At age 30, the median salary of members with only a high school education is about $2,000 per year less than that of members having a civil engineering degree. This differential remains fairly constant throughout the age range. Those ITE members who take graduate work in traffic engineering apparently realize monetary benefits therefrom mainly after age 40—at which the median annual salary benefit over civil engineering graduates gradually increases to about $800 per year after age 55. Institute members with a degree in civil engineering appear to receive higher salaries than those with a degree in some other field immediately upon entry into the traffic engineering field and consistently thereafter.

Salaries by Registration Status

ITE members who are registered as professional engineers seem to have definite salary advantages over members who are not registered. As Figure 10 shows, the median annual salary of registered members is significantly above that for non-registered members at all ages. The salary difference increases from approximately $600 to age 27 to approximately $2,000 after age 42.

Although ITE members in the upper salary levels may be in a better position to become registered, it is not felt that this factor is influential enough to account for the continuous and definite salary difference between registered and non-registered Institute members. (As noted before, there is a possibility that a number of respondents in this survey indicated they were "registered" by virtue of their being classified as an "Engineer-In-Training." This would make the differential even greater.) It would appear that there are definite monetary benefits to be gained from professional registration and that such benefits accrue almost immediately upon entry into the traffic engineering field.

Major Branch of Engineering

Three-fourths of ITE members responding to the questionnaire indicated that they are engaged primarily in traffic engineering work, with 62 per cent citing traffic engineering as their sole "major branch of engineering" (Table 6). The only other branch of engineering reported to any extent by questionnaire respondents was highway planning, with 11 per cent of the repliers indicating that to be their major branch of engineering.

Table 6
MAJOR BRANCH OF ENGINEERING REPORTED BY ITE MEMBERS

Major Branch of Engineering	% of Members
Traffic Engineering	62
Traffic Engineering plus Others	13
Highway Planning	11
Highway Design	2
Highway Construction	2
Multiple, and Other than Above	10
	100

Time Spent on Selected Activities

Analysis of the per cent of time ITE members spend on selected activities reveals that a very high proportion of their average day involves duties of an administrative nature. This is consistent with the generally high level of responsibility reported. As a whole, questionnaire respondents indicated that an average of 40 per cent of their day is spent on administration. The proportion of time spent on administrative matters ranged from 26 per cent for those in the field of education to 51 per cent for Institute members employed by Federal highway agencies or by cities of 100,000 to 250,000 population.

SALARY OF I.T.E. MEMBERS BY AGE AND FIELD OF EMPLOYMENT

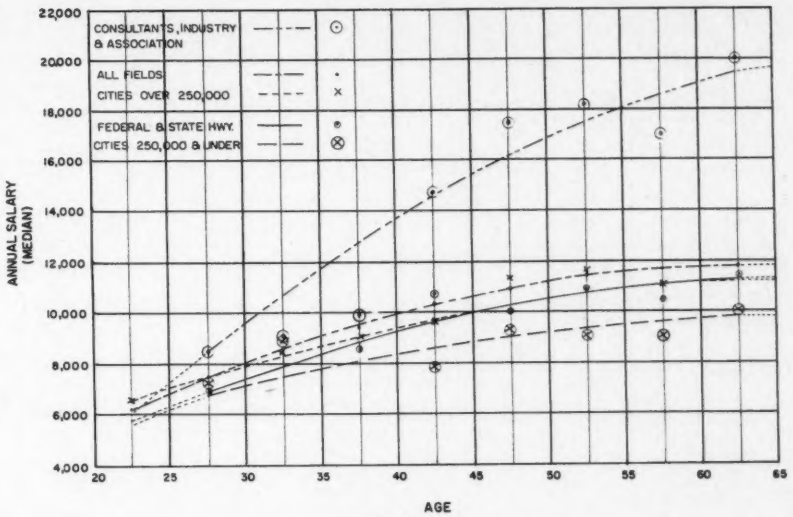


Figure 7

Administrative work far outranked the activity consuming the second-most amount of time of the traffic engineer—traffic planning, on which respondents indicated that they spend 17 per cent of their time. Institute members spend only 5 per cent of their time on research, with most of the research being performed by those who are employed by educational institutions, Federal highway agencies, or associations. Very little research is apparently being performed by traffic engineers of state, county and city governments or by consultants.

As is to be expected, the per cent of time required for administrative duties increases with the traffic engineer's level of responsibility. Figure 11 indicates that the per cent of time required for administrative work rises sharply and steadily as higher grades are reached—from approximately 15 per cent at a Grade 3 level of responsibility to nearly 60 per cent at Grade 9. Conversely, the time spent on traffic planning drops from 34 per cent to 22 per cent between Grades 3 and 4 and subsequently decreases to 12 per cent at Grade 9. Traffic design activities consume about the same per cent of ITE members' time at all levels of re-

COMPARISON OF SALARY OF ITE MEMBERS EMPLOYED BY GOVERNMENT WITH SALARY OF ALL ENGINEERS EMPLOYED BY GOVERNMENT

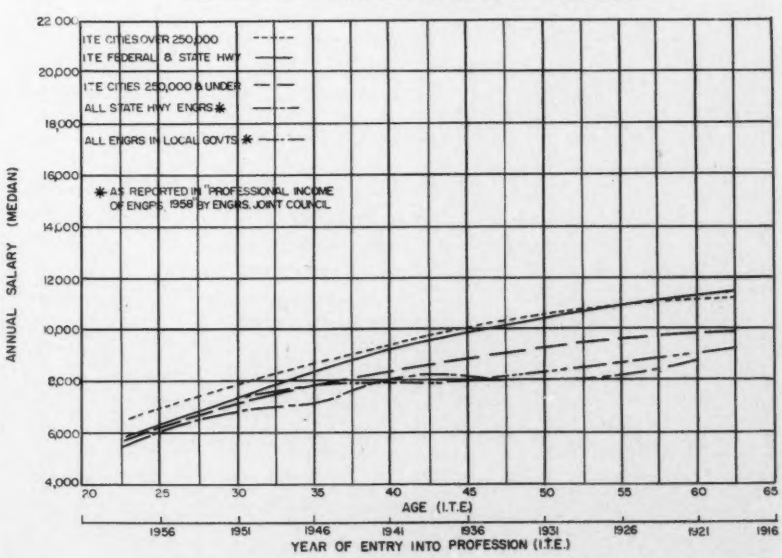


Figure 8

SALARY OF I.T.E. MEMBERS BY AGE AND EDUCATION

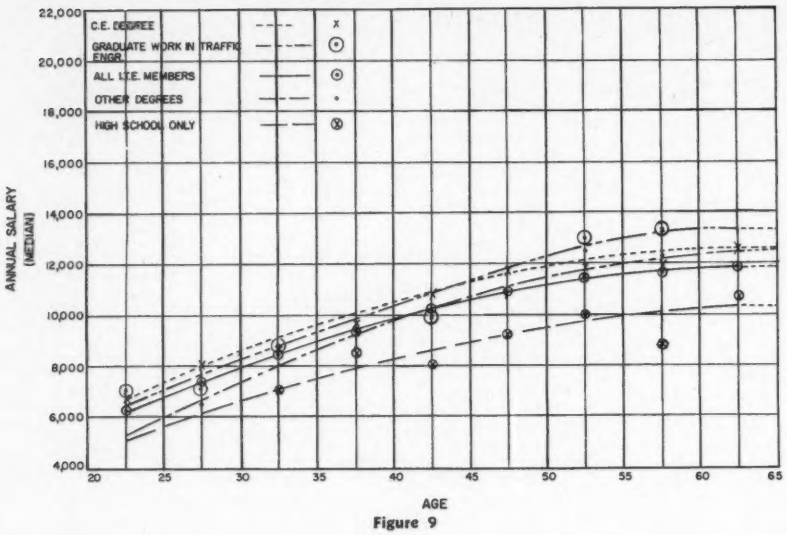


Figure 9

sponsibility, though decreasing gradually from thirteen per cent at Grade 3 to seven per cent at Grade 9. None of the other activities denoted on the questionnaire appears to vary significantly with levels of responsibility. In toto, however, the time devoted thereto drops considerably between Grades 5 and 7, from 44 per cent to 30 per cent.

Untabulated Sample Data

Because of apparent widespread misinterpretation of the questions pertaining to the number of engineers and ITE members "reporting to" survey respondents, replies to these particular questions were not analyzed. Preliminary summaries of answers to those questions yielded information that was obviously unreliable or misleading. Other analyses which proved invalid or insignificant included determinations of: the registration status of ITE members by age and grade: level of responsibility of ITE members by grade and years in traffic engineering; and level of responsibility of ITE members by major branch of engineering.

In consideration of the data obtained as to the fields of employment of Institute members, a summarization of replies to question 11 (employment status) was deemed to be of no particular value and was not made.

SALARY OF I.T.E. MEMBERS BY AGE AND REGISTRATION STATUS

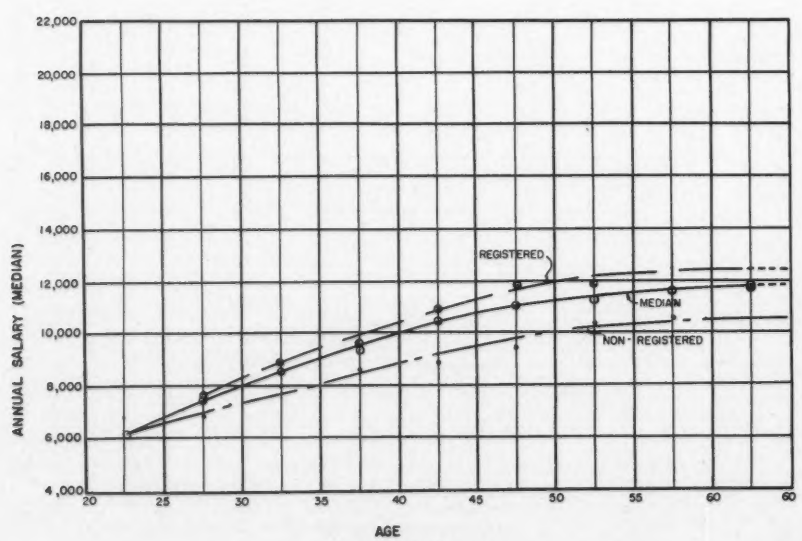


Figure 10

With due respect to the reservations that have been noted for certain analyses, it is believed that the data and relationships presented in this report are unbiased and have been developed with proper circumspection.

Summary

In summary, analysis of data obtained in the 1959 Institute of Traffic Engineers membership survey produced the following information apposite to the status of the Institute and its members:

1. The median age (38) of the ITE membership is somewhat higher than might be expected for an engineering society.

2. Comparatively few Institute members are between the ages of 40 and 44; exceptionally few are 27 years of age or younger.

3. A high proportion of Institute members (87%) have received a college degree, and many (46%) have taken graduate work in traffic engineering.

4. A substantial majority (71%) of the ITE membership are in the employ of Federal, state or local governments—with nearly one-third of all members holding positions in state highway departments.

5. The fields of education, industry and "association" each constitute only 4 per cent or less of the Institute's membership.

6. Sixty-five per cent of the members of ITE are registered professional engineers.

7. Traffic engineers as a group have reached high levels of responsibility in a fairly short time. The potentials for professional growth are excellent for Institute members who acquire more experience in traffic engineering.

8. The salaries of traffic engineers appear to compare quite favorably with those of other engineers—especially in the instance of government-employed engineers.

9. ITE members in non-governmental positions receive substantially higher salaries than members employed by Federal, state or municipal agencies. The salaries of members employed by cities of 250,000 population or under are consistently lower than those of members in any of the other basic fields of employment.

10. As is to be expected, salary benefits are gained by Institute members who increase their level of re-

(Continued on page 42)

Traffic News

Prisk Named Matson Award Winner

Charles W. Prisk (Member, ITE) has been named winner of the 1959 Theodore M. Matson Memorial Award for 1959. The announcement was made in New York at the Annual Meeting of the Institute of Traffic Engineers.

The Award was established in memory of the former Director of the Yale Bureau of Highway Traffic, a leader in the traffic engineering field and an active member of the Institute of Traffic Engineers. Prisk, director of the Highway Safety Study of the U. S. Bureau of Public Roads, is the third winner of the Award, which is given annually to a man deemed to have made major contributions to the traffic engineering field.

Earlier winners were O. K. Normann of the Bureau of Public Roads, named in 1957, and D. Grant Mickle, winner in 1958. All selections were made by a Board of Award consisting of Burton W. Marsh, chairman, A. E. Johnson, Carl E. Fritts, Fred W. Hurd, Wilbur S. Smith, and E. H. Holmes.

The citation given Mr. Prisk notes his contributions in the field of research, and gives special recognition to his work on the recent Highway Safety Study. It also refers to his committee activity, both official and non-official, and his leadership of the Institute of Traffic Engineers. The full text of the citation follows:

1959
THEODORE M. MATSON
MEMORIAL AWARD CITATION
FOR OUTSTANDING
CONTRIBUTION TO
THE ADVANCEMENT OF
TRAFFIC ENGINEERING

CHARLES W. PRISK

Charles W. Prisk, native of Connecticut and graduate of the University of New Hampshire, after brief general highway engineering experience and a year at the Yale Bureau of Highway Traffic, has devoted his professional career in the Bureau of Public Roads to the cause of traffic engineering.

Mr. Prisk has won wide recognition in the fields of traffic operation and safety. Through the conduct and application of research he has brought many advances to the theory and practice of traffic control. As Director of the Highway Safety Study, conducted by the Bureau of Public Roads at the direction of Congress, he was the principal author of "The Federal Role in Highway Safety," the outstanding work to date in this field and one that will have enduring value and far-reaching effects.

He has served on many official and non-official committees, one of the most important being the Committee on Traffic of the American Association of State Highway Officials. As its secretary he has done much to bring the science and philosophy of traffic operation to the broader area of highway engineering.

Mr. Prisk has worked tirelessly and effectively in the interests of the Institute of Traffic Engineers. As President he guided the organization through a critical period that saw a change in location of its headquarters and major improvements in Institute operations, including a revision of its financial structure. He has given outstanding service in attaining constantly higher professional standards for the organization. He was instrumental in launching the life insurance program of such important personal benefit to its members.

For his technical contributions to the science of traffic engineering, for his outstanding leadership of the Institute of Traffic Engineers, and for his untiring zeal in raising the professional stature and prestige of the Institute, this award is made to Charles W. Prisk.

BOARD OF AWARD

Burton W. Marsh, *Chairman*, representing the Institute of Traffic Engineers

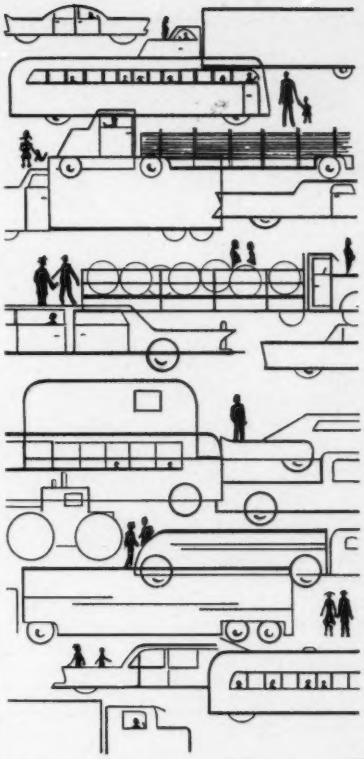
A. E. Johnson, representing the American Association of State Highway Officials

Carl E. Fritts, representing the Automotive Safety Foundation

Fred W. Hurd, representing the Committee on Transportation, Yale University

Wilbur S. Smith, representing the Highway Research Board

E. H. Holmes, representing the U. S. Bureau of Public Roads.



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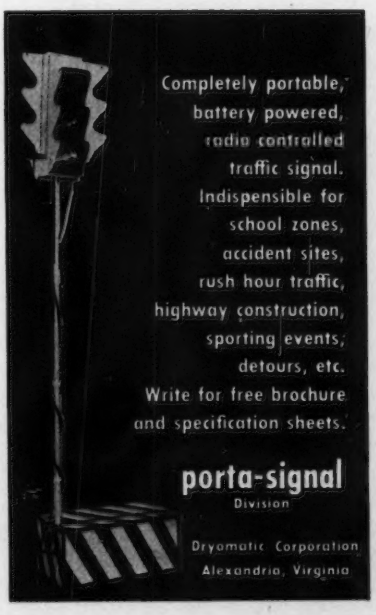
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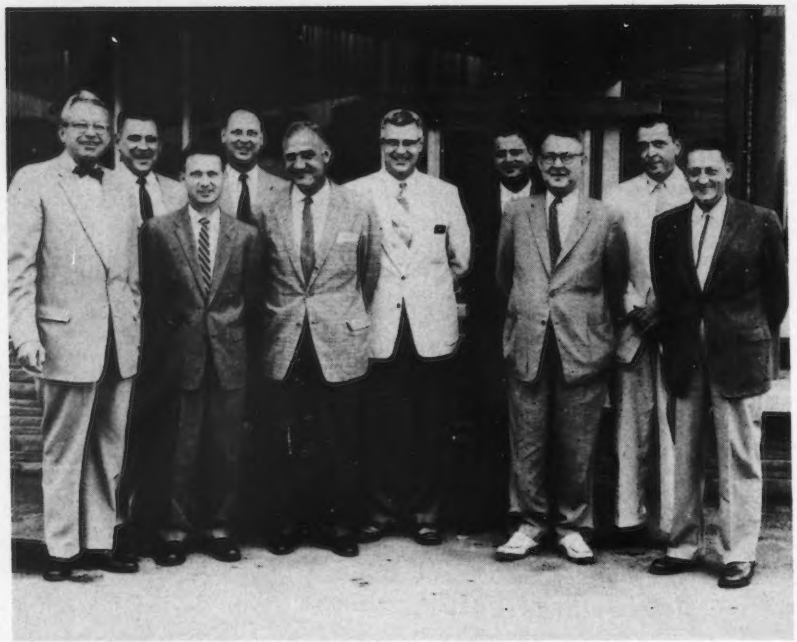

N. Y. STATE TRAFFIC ENGINEERING ADVISORY COMMITTEE—Left to Right: Henry W. Osborne, Edward Melchen, Donald A. Walsh, Charles Herr (Traffic Commission employee, not a committee member), Louis E. Bender, Arnold G. Fisch, Arthur Freed, Lloyd A. Maeder, John I. Manning, Louis W. Schneider. Absent when photograph was taken: Gordon K. Gravelle, William F. Kavanaugh, R. Harrison Young.

New York State Takes Big Step in Traffic Control

The establishment of a Traffic Engineering Advisory Committee as a permanent adjunct to the State Traffic Commission of New York has been announced by William S. Hults, Commissioner of the New York Motor Vehicle Bureau and Chairman of the New York State Traffic Commission.

Members of the new 11-man committee (eight are members of ITE) are technically trained traffic personnel. They were selected on a non-partisan basis and were chosen from municipal traffic regulatory agencies to represent various areas of heavy traffic concentration throughout the State of New York.

Function of the new committee is the continuing review of the Commission's Manual of Uniform Traffic Control Devices with recommendations for additions and modifications; the evaluation of traffic control techniques and the exchange of information on methods for improvement in traffic regulation and control.

The Traffic Engineering Advisory Committee consists of:

Louis E. Bender, Chief, Traffic Engineering Division, Port of New York Authority; Arnold G. Fisch, Traffic and Safety Engineer, State Thruway Authority; Arthur Freed, Traffic Engineer, Westchester County; William F. Kavanaugh, Traffic Engineer, Syracuse; John I. Manning, Traffic Engineer, Schenectady; Edward Melchen, Assistant Engineer, Ithaca; Henry W. Osborne, Traffic Advisor and Engineer, Buffalo; Louis W. Schneider, Assistant Chief Inspector, Nassau County; Donald A. Walsh, Counsel, Conference of Mayors; Gordon K. Gravelle, First Deputy Commissioner and Chief Engineer, Department of Traffic, New York City, and R. Harrison Young, Director of Traffic Control, Rochester.

Lloyd A. Maeder, Director of the Traffic Commission, will be an ex-officio member of the new Traffic Engineering Advisory Committee.

The new Committee is an out-growth and expansion of the temporary committee named two years ago by the Conference of Mayors to help the Traffic Commission revise its Manual of Uniform Traffic Control Devices.

The work done by this temporary committee was so valuable to the Traffic Commission, it is reported, that measures were taken to make it a permanent and continuing committee.

Letters of confirmation from mayors, city managers and other administrative heads of the local government and regulatory bodies involved were received giving the appointees permission to accept their new unsalaried and "extra-curricular" jobs.

Committee meetings are tentatively scheduled for three or four times a year.

"We feel," said Mr. Maeder, Director of the Traffic Commission, "that the creation of this Traffic Engineering Advisory Committee will help us effect a smooth bridge between state and local jurisdiction and will help hasten the education of all New York drivers through the use of uniform traffic regulations and control devices."

Transit Systems to Displace Autos?

Explosive metropolitan area growth in the next two decades will necessitate revolutionary changes in urban transportation, according to Dr. Philip M. Hauser, professor and chairman, Department of Sociology, University of Chicago in an address made at the 78th annual meeting of the American Transit Association.

"The change in this instance will mean going back — back to public transportation systems," he said. "But they will not be the same transit systems which met the needs of metropolitan areas in preceding generations. They will be the new types of transit systems that science and engineering, coupled with imaginative and progressive leadership, are beginning to develop."

Dr. Hauser, a former acting director and deputy director of the U. S. Bureau of the Census, forecasts an increase of *54 to 80 per cent* in the population of the U. S. as a whole in the 30 years between 1950 and 1980, with the *population of metropolitan areas throughout the country almost doubling.*

By 1980, he stated, it is possible that the number of standard metropolitan areas in the U. S. will have increased to over 200, and that *they will contain a population greater than that of the entire country in 1950.*

"That is," he explained, "they may have a population of some 165 million persons."

Dr. Hauser charged that the automobile, which he said has been a basic force in the concentration of population in great metro-areas and decentralizing it within them, "is creating a major crisis in increasingly strangling circulation within the metropolitan area and especially in the central business district."

"Traffic congestion, murderous fatality rates, inadequate parking facilities combine to make the automobile commuters' lot a wearing, frustrating and even dangerous experience," he asserted.

"The actute problems of passenger transport which face our metropolitan areas today are being greatly exascerbated by the explosive growth which we are now experiencing and which is still in prospect in the decades immediately ahead.

"In facing the problems the answer, without question, is to be found in the reestablishment of the relative importance of public transport in moving people within the metropolitan area—a renaissance already long overdue."

Predicting 32 million additional workers in metropolitan areas by 1980, Dr. Hauser maintained that they would, if they all traveled by automobile, use 21,300,000 additional vehicles.

"This would require 105 square miles of additional parking space and 84 square miles of additional highways," he stated. "The parking space requirement alone would probably constitute at least half of the total 'downtown area' in the 200 standard metropolitan areas in 1980 . . .

"When the return to public transit is made, there will be great variation in the specific nature of local government to rapid transit systems in methods of financing, in the specific nature of the public transit facilities, in the form of its management and the like. But certain commonalities are almost certain to be present, including the following:

"1. Cities will increasingly be forced to prohibit the flow as well as the parking of automobiles in central areas, not only in central cities, but also, increasingly in other urban places even in the suburban parts of metropolitan areas.

"2. The automobile will more and more become a 'feeder' vehicle to public transit facilities for intrametropolitan area movement.

"3. Parking space for 'feeder' automobiles will greatly expand, will be made much more conveniently available, and probably for 'free.' Parking space for feeder automobiles will increasingly become part of the public transit service.

"4. Public transit systems will become much improved in comfort, convenience, speed and safety. The decreased use of the automobile for central city movements will greatly contribute to this.

"5. Public transit systems will, after a period of relative eclipse, assume much greater importance and the automobile much less importance for intrametro area movement and especially for movement into central business areas."

Duncan Elected President American Transit Association

W. E. P. Duncan, general manager-subway construction, Toronto Transit Commission has been elected president of the American Transit Association. He is the first Canadian to head the 77-year old organization which represents transit systems in most of the major cities of the U. S. and Canada.

Mr. Duncan was vice-president of the association and succeeds John H. Walsh, of Waltham, Mass., in the association's top post. Mr. Walsh is president of transit companies in Waltham, Worcester and Springfield, Mass.

John E. McCarthy, president, Fifth Avenue Coach Lines, Inc., New York, was elected vice-president, to succeed Mr. Duncan. Mr. McCarthy, who had served eight years as the association's treasurer, is succeeded by C. Frederick Rogge of Maplewood, N. J., vice president and general manager, Public Service Coordinated Transport.

Elmer A. Clees Dies

Elmer A. Clees (Assoc. Mem. ITE), Work Control Engineer of the Washington State Highway Department died in Olympia, Washington on September 15th. Mr. Clees has worked for the Department of Highways of the State of Washington since September 1939 — serving as Engineering Aide, Engineer I, and Junior Highway Engineer until 1951 when he received his B. S. in civil engineering from St. Martin's College in Olympia. At that time he was made Associate Planning Engineer and continued in promotion until he was Work Control Engineer of the Washington State Highway Department at the time of his death.

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JAMES C. VICKERS is pictured here practicing his highly specialized skills in one of our country's great chemical plants. Mr. Vickers is typical of the thousands of expert workers in this field who are buying U.S. Savings Bonds regularly. Mr. Vickers uses his company Payroll Savings Plan to make regular contributions to the Peace Power of his country.

INSTITUTE OF TRAFFIC ENGINEERS

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Yale Traffic Engineering Class for 1959-1960

Thirty-two traffic engineers have begun studies at the Yale Bureau of Highway Traffic. The full roster of the current student group is as follows:

Adams, Clinton Francis, Jr. — Traffic Engineer II, City of Providence, 147 Fountain Street, Providence, Rhode Island. 36 Winchester Avenue, New Haven, Connecticut SP 6-0717.

Allen, Brian Leonard — Engineer, Grade II, Chief Engineer's Department, London County Council, County Hall, London, S.E. 1, England. 92 Carmel Street, New Haven, Connecticut MA 4-5352.

Anderson, Richard J.—Assistant Highway Engineer, New Jersey State Highway Department, Trenton 1, New Jersey. 116-118 Mansfield St., New Haven, Connecticut LO 2-1336.

Basmadjian, Alvin George—Assistant Traffic Engineer, Department of Streets and Traffic, 735 Randolph, 15th Floor, Detroit, Michigan. 70 Hawley Avenue, Woodmont, Connecticut TR 8-5375.

Burton, J. S.—Assistant Engineer, Divisional Road Engineer, Ministry of Transport EC.A., Lombard House, Great Charles Street, Birmingham, England. 301 Prospect Street, New Haven, Connecticut SP 7-9801.

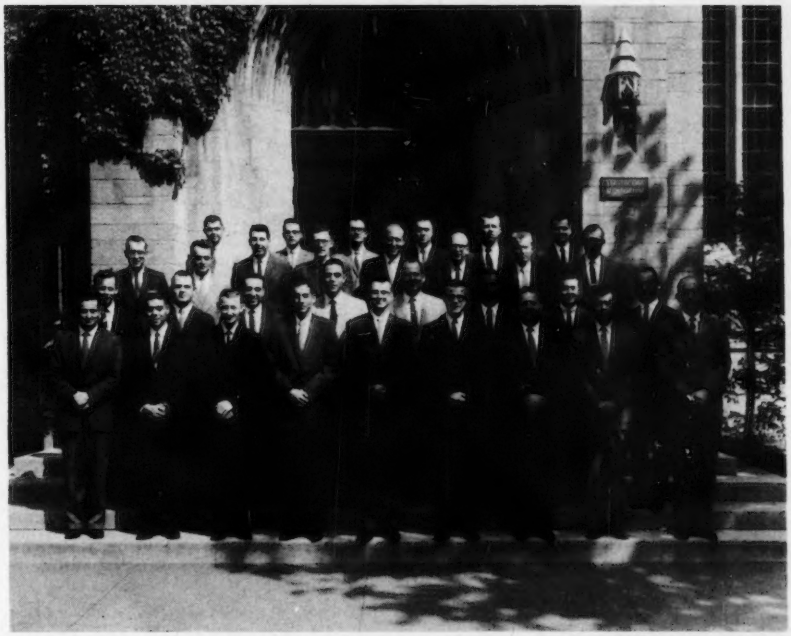
Bulman, David D.—Principal Rights-of-Way Engineer, Robert E. Smith, Consulting Engineer, 5 St. Paul Street, Rochester, New York. 163 West Beach Street, Woodmont, Connecticut TR 8-4388.

Clark, Thomas R. — District Traffic Engineer, Wisconsin State Highway Commission, District 2, 310 S. West Avenue, Waukesha, Wisconsin. 174 Beach Avenue, Woodmont, Connecticut TR 8-4277.

Coffin, John Foster—Assistant Traffic Engineer, Department of Traffic and Parking, 200 Orange Street, New Haven, Connecticut. 13 Wildwood Drive, Branford, Connecticut HU 8-7648.

Cooley, James B.—Highway Engineer, Bureau of Public Roads, 521 Peachtree-Seventh Building, 50 Seventh Street, N.E., Atlanta 23, Georgia. 7 Mont Street, Woodmont, Connecticut TR 8-5077.

Crewz, Warren G. — Highway Plans Designer, Missouri State Highway Department, District 2, Macon, Missouri. 20 Blackall Road, Woodmont, Connecticut TR 8-5391.



YALE STUDENT GROUP FOR 1959-60 — First row: Underwood, Martinez, Allen, Cooley, Robbins, Gardiner, Tarto, White, Hodgen. Second row: Loveday, Silence, Engustian, Morin, Adams, Basmadjian, Keller, Mendelson. Third row: Bulman, Suonio, Daniel, Bruton, Clark, Royer, Stewart, Crewz. Fourth row: McCaffrey, Hryhorzcuk, Anderson, Dawson, Hanson, Coffin.

Dake, Daniel — Highway Engineer, Bureau of Public Roads, Building 40, Denver Federal Center, Denver, Colorado. 1215 Hartford Turnpike, North Haven, Connecticut AT 8-9953.

Daniel, Edward August — Engineer Trainee, Traffic Division, Michigan State Highway Department, Lansing, Michigan. 36 Winchester Avenue, New Haven, Connecticut SP 6-0717.

Dawson, Robert Frank—Graduate Assistant, Riley Robb Hall, Cornell University, Ithaca, New York. 2951 Whitney Avenue, Hamden, Connecticut CH 8-4059.

Engustian, Vartges—Civil Engineer II, Town Hall, West Hartford, Connecticut. 48 Beverly Road, West Hartford, Connecticut AD 3-0150.

Gardiner, Walter W., III — Junior Highway Engineer, Connecticut Highway Department, Hartford, Connecticut. 20 Arch Street, New Haven, Connecticut SP 7-0965.

Hanson, Douglas R.—Structural Engineer, 75 South Robert, St. Paul, Minnesota. 5 Mont Street, Woodmont, Connecticut TR 8-5438.

Hodgen, Robert—Chief Assistant Engineer, Scott & Wilson, Kirkpatrick & Partners, P.O. Box 91, Apapa, Lagos, Nigeria. Limewood Avenue, Indian Neck, Branford, Connecticut HU 8-3765.

Hryhorczuk, Boris Richard — Consulting Engineer, W. L. Wardrop & Associates, 456 Notre Dame Avenue, Winnipeg, Manitoba, Canada. 3 Mont Street, Woodmont, Connecticut TR 8-4050.

Keller, Charles Richard — Engineer Trainee, Virginia Department of Highways, 1221 East Broad Street, Richmond, Virginia. 70 Hawley Avenue, Woodmont, Connecticut TR 8-5375.

Loveday, John Michael—Traffic Engineer, Highways & Survey Department, Civic Centre, Birmingham 1, England. 262 Bradley Street, New Haven, Connecticut SP 7-9487 (Temporary).

Martinez, Renato Gilbert — Engineer Trainee II, New Mexico Highway Department, Santa Fe, New Mexico. 136 Dwight Street, New Haven, Connecticut MA 4-7865.

McCaffrey, John Francis — Engineer, Kaiser Aluminum & Chemical Corporation, 500 Wood Street, Bristol, Rhode Island. 432 Humphrey Street, New Haven, Connecticut MA 4-9722.

Mendelson, David — Junior Highway Engineering Intern, Connecticut State Highway Department, 24 Wolcott Hill Road, Wethersfield, Connecticut. 227 Crown Street, New Haven, Connecticut UN 5-9140.

Morin, Donald Arthur—Highway Engineer, Bureau of Public Roads, Room 740 Morgan Building, 720 S. W. Washington Street, Portland 5, Oregon. 14 Crest Place, Milford, Connecticut TR 8-5620.

Robbins, John E. — Civil Engineer I, Michigan State Highway Department, Research Laboratory Division, Room 3, Olds Hall, Michigan State University, East Lansing, Michigan. 169 West Beach Avenue, Woodmont, Connecticut TR 8-5233.

Royer, Joseph Paul, Jr. — Engineer Trainee, Virginia Department of Highways, Traffic and Planning Division, 1221 East Broad Street, Richmond, Virginia. 70 Hawley Avenue, Woodmont, Connecticut TR 8-5375.

Silence, Steiner M. — Highway Engineer, Bureau of Public Roads, 405 East Washington, Springfield, Illinois. 554 Eastern Street, New Haven, Connecticut HO 7-7672.

Stewart, Thomas Worth—Senior Engineering Assistant, Texas Highway Department, Expressway Office, Corpus Christi, Texas. 36 Winchester Avenue, New Haven, Connecticut SP 6-0717.

Suonio, Vaino — Highway Engineer, The District Office of Administration of Public Roads and Waterways, Kouvola, Finland. 301 Prospect St., New Haven, Connecticut SP 7-9801.

Tarto, Jack J.—Assistant Traffic Engineer, City Hall, New Orleans, Louisiana. 281 Whalley Avenue, New Haven, Connecticut.

Underwood, Robin Thomas—Assistant Engineer, Country Roads Board, Exhibition Building, Rathdown Street, Carlton N. 3, Victoria, Australia. Y. M. C. A., 52 Howe Street, New Haven, Connecticut UN 5-3161.

White, William Harry—Area Engineer, Bureau of Public Roads, Raleigh, North Carolina. 57 West Cherry Street, Woodmont, Connecticut TR 8-5680.

Highway Transportation Legislation News

Highway transportation matters have been in the forefront of legislative activity this year, both at the Federal and state levels.

Forty-eight state legislatures and the U. S. Congress have held regular or special sessions this year. Only two states—Kentucky and Mississippi—did not meet. To date, all but six have adjourned for the year.

Federal Highway Program

The President has approved the Federal-Aid Highway Act of 1959 calling for a one-cent increase in the Federal gasoline tax over the next 21 months.

The one-cent increase in the Federal tax on gasoline and other motor fuels will become effective as of October 1, and will run until July 1, 1961.

The Act also provides that one-half the revenue derived from the 10 per cent Federal tax on new cars and 62.5 per cent of the eight per cent tax on automotive parts and accessories will be transferred to the Highway Trust Fund for three years beginning July 1, 1961.

It provides that Federal standards controlling billboards shall not apply to segments of the Interstate System in municipalities where the use of real property is subject to municipal regulation or control, or in industrial or commercial areas.

Other provisions (1) authorize an additional $2 million to be appropriated out of general funds for parkways for the 1960 fiscal year; (2) provide for a study by the Secretary of Commerce of the need for extension of the Interstate System within Alaska and Hawaii; (3) authorize expending 100 per cent Federal monies on forest, park and Indian reservation roads damaged by earthquakes, severe storms, or other catastrophes; (4) increase the authorization for building bridges on Federal dams from $10 million to $13 million.

State Motor Fuel Taxes

Four states have increased gasoline tax rates this year: New Hampshire (6c to 7c), New York (4c to 6c), Ohio (5c to 7c) and West Virginia (6c to 7c). A proposed one-cent increase in Pennsylvania has passed the House. Such proposals were killed or died on adjournment in Alaska, Arizona, Arkansas, Massachusetts, Minnesota, Missouri, Montana, Oregon, Washington, and Wyoming.

The present range of gasoline tax rates is from three cents (in Missouri) to seven cents (in 13 states).

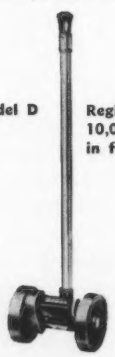
Mileage Taxes

Imposition of mileage taxes was proposed in eight states: Arkansas, Kansas, Montana, New Mexico, New Jersey, Pennsylvania, South Dakota, and West Virginia. The Montana bill was vetoed by the Governor, the Pennsylvania bill is pending, and all others were defeated. Unsuccessful attempts were made in Colorado and Illinois to change existing mileage taxes. A bill calling for repeal of Ohio's axle-mile tax and a similar bill affecting New York's weight-distance tax died on adjournment.

Registration Fees

Registration fee increases or major amendments have been enacted in Arizona, Colorado, Massachusetts, North Dakota, Oregon, South Carolina, and West Virginia. In California,

FOR MANY TRAFFIC ENGINEERING USES



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The Shalda Measure Meter has been put to practical use by traffic engineers all over the nation. Its simplicity and accuracy has proven tremendously valuable in traffic engineering and has been accepted as a useful and practical tool.

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- Extension handle to 40 inches.
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Just walk it ahead—the precision computer clocks off feet and inches like an automobile speedometer...with equally simple reading. To subtract—just back it up.

At only $42.50 will pay for itself many times over.

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Pictured at left is James Booth who has just returned as an International Road Federation traffic engineering consultant in Southern Rhodesia; in center is Henry A. Barnes, Commissioner of Transit and Traffic, City of Baltimore, who is making a European trip for the International Road Federation this fall. At right is Robert O. Swain, Executive Director, International Road Federation. All three are members of the Institute of Traffic Engineers. Mr. Booth spent three months in Rhodesia as a consultant and Mr. Barnes will spend two months in Europe visiting Sweden, Denmark, Germany, Switzerland, Italy, Spain, France and the U.K. as a consultant and lecturer.

a reduction in vehicle fees was scheduled for January 1, 1960, but a new law cancelled this provision. A new law in New Hampshire increased operating authority fees for commercial vehicles. Utah has enacted a retaliatory tax law affecting nonresident commercial vehicles. New reciprocity laws were enacted in Iowa, North Dakota, South Dakota, and Wisconsin. In Georgia, the Reciprocity Commission was abolished and the responsibility of negotiating agreements was transferred to the Governor.

Service Facilities on Controlled-Access Highways

Ten states have enacted legislation this year to preserve competitive private enterprise by prohibiting the location or operation of commercial businesses on the rights-of-way of controlled-access highways. The states are Arkansas, Connecticut, Delaware, Illinois, Minnesota, Montana, North Dakota, South Dakota, West Virginia and Wyoming. This makes a total of 26 states that have acted to prevent the establishment of monopolistic enterprises such as those on toll roads.

New Mexico adopted a memorial requesting the Bureau of Public Roads to remove the restriction on the use of Federal-aid highway rights-of-way by private businesses.

The Maryland Governor vetoed a proposal that would have prohibited commercial enterprises on the Baltimore-Washington Expressway.

Speed Limits

Higher speed limits on controlled-access highways were introduced in 17 states and enacted in California, Colorado, Indiana, Iowa, Kansas, Maine, Missouri, North Carolina, North Dakota, South Dakota and Wyoming.

California Plans Median Barriers After Crash Tests

The California Division of Highways will install barriers in the center strip of some of California's more heavily-traveled freeways as the result of newly completed research into the problem of the infrequent but often deadly head-on freeway collision.

New types of barriers, developed in a series of laboratory-controlled crash tests, will be installed shortly on sections of freeway in the Los Angeles and San Francisco Bay Areas.

Along with the crash tests, the Division of Highways undertook a detailed study of recent freeway accidents, to help determine where the new type barriers would be likely to do the most good.

If experience with the initial installations proves successful, barriers will be installed on other freeways which carry heavy traffic.

The first major installation of the new barriers will be on a 13.2-mile section of the Hollywood and Santa Ana freeways (U. S. 101) between Benton Way in Los Angeles and Lakewood Boulevard near Downey. A total of $500,000 is budgeted for the job.

Another 3.6 miles of median (center strip) barrier are included in landscaping projects on sections of the Ventura and San Diego Freeways in the San Fernando Valley.

Additional barrier projects will be on the Nimitz Freeway (Sign Route 17) between Washington Avenue near San Leandro and High Street in Oakland, and on the James Lick (Bayshore) Freeway (U. S. 101 Bypass) between Third and Army Streets in San Francisco. A total of $406,000 has been allocated for these projects.

The detailed freeway accident study is the first of its kind and scope dealing with highways which carry very heavy traffic volumes. A full report of the work will appear in two articles scheduled for publication in the December issue of Traffic Engineering.

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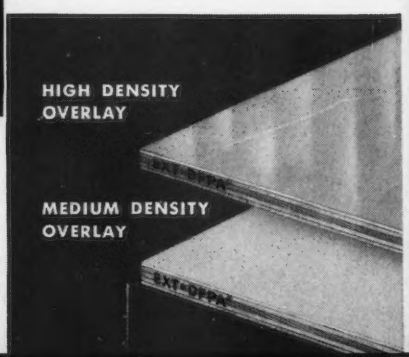
On standard black-background informational signs, reflective letters are applied directly to black High Density overlaid plywood, eliminating painting.



High Density overlaid plywood needs no protective painting; color (black, brown or amber) is in the overlay. Medium Density is for plain painted signs. Base panel is waterproof Exterior plywood.

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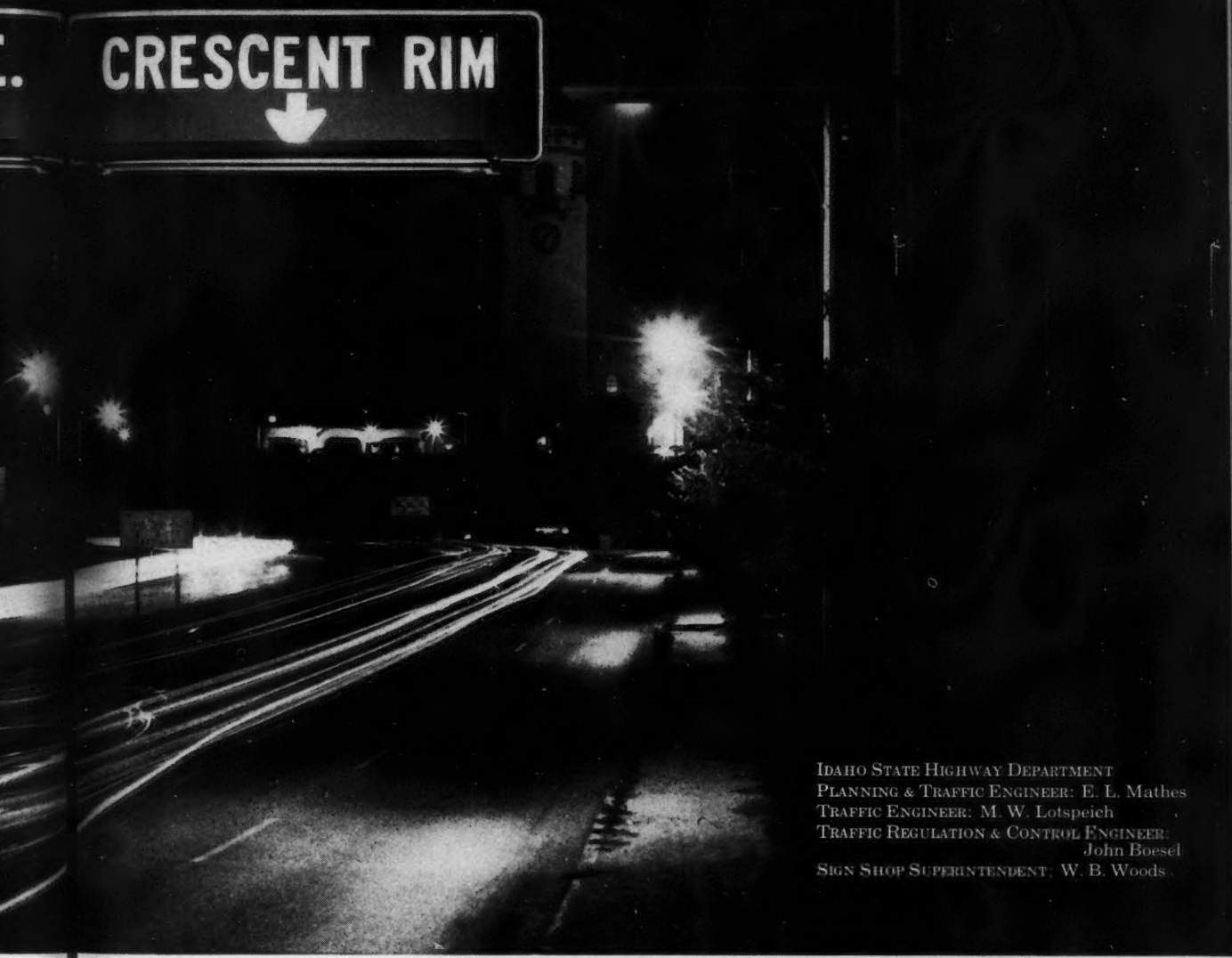
ns of overlaid fir plywood



IDAHO STATE HIGHWAY DEPARTMENT
PLANNING & TRAFFIC ENGINEER: E. L. Mathes
TRAFFIC ENGINEER: M. W. Lotspeich
TRAFFIC REGULATION & CONTROL ENGINEER: John Boesel
SIGN SHOP SUPERINTENDENT: W. B. Woods

Illuminated for maximum night-time legibility this overhead installation is prime example of Idaho's efficient signing system.

OVER 7,000 MODERN OVERLAID PLYWOOD SIGNS of every type and size help make motoring a pleasure on Idaho's scenic highways. They also help the state highway department do a better signing job at considerable savings to taxpayers.

Until 1953, when Idaho switched to High Density overlaid plywood, maintenance and repair had been a constant problem. Weathering is unusually severe; temperature ranges from 115° above to 40° below zero. Vandalism damage from hunters in isolated areas and resultant progressive deterioration were particularly troublesome. Under these rugged conditions, overlaid plywood has performed consistently well—particularly in areas where signs are subjected to unusual abuse. As a result, maintenance costs have dropped sharply.

Initial fabrication and installation costs are also less. Records at the Idaho sign shop in Boise show a completed overlaid plywood sign costs between 10 and 15 percent less than aluminum.

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the lifetime flexible visor.

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PRESSLITE,
the illuminated pedestrian push button.

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LENS EXPANDERS
for better arrow indications.

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All aluminum span wire fittings and brackets.

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Fully actuated electronic controllers.

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Semi-actuated electronic and electro-mechanical controllers.

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Adjustable traffic signals.

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Multi-dial controllers.

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Write or call for
complete information.

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Brooklyn 11, N. Y.
Evergreen 8-4742

Strictly Business

New Type Electric-Light Reflector

A new type of electric-light reflector which uses curved glass wedges, provides maximum visual comfort under high-level electric lights, has been reported by two Cleveland lighting engineers, who recently conducted "glare" tests on several distinct types of reflectors.

Because vision specialists after ten years of laboratory study at the University of Michigan and Ohio State University, proved that the human eye, to see effectively, needs two or three times more light than had been in general use, lighting designers are now sharply increasing the amount of electric lighting provided for most seeing tasks. Higher light levels, however, produce greater amounts of uncomfortable glare. The newly-designed glass reflector, according to the report of the Cleveland engineers, reduces glare while allowing the level of light to remain high.

In the new reflector, the curved glass wedge is louvered to deflect discomforting light rays from the line of vision without materially reducing the amount of light available for easy seeing, according to the two researchers, Q. D. Dobras and D. R. Phillips, (General Electric Co., Nela Park, Cleveland). The two engineers subjected several reflector systems to a standard set of tests which showed how much light each system sacrificed in providing a comfortably low level of brightness.

The engineers point out that "the data obtained indicate that of the systems tested, the only ones that combine good lighting efficiency and low luminaire (lamp fixture) brightness are those utilizing the parabolic (curved) wedge louvre design."

3M Promotes Eugene L. McKenzie

Minnesota Mining & Manufacturing Co.'s reflective products division has announced the promotion of Eugene L. McKenzie to research and development manager for reflex reflective materials.

McKenzie, who has been with 3M since 1944, has been a reflective products laboratory superviser since 1955. In his new position he will be responsible for research and development work involving reflective sheeting, reflective liquids, pavement marking materials and reflective fabric.

New Automatic Bead Spreader

S. B. Beugler Company, 3667 Tracy Street, Los Angeles 36, California announces a new reflectorized, hand operated, automatic Bead Spreader. Operated in conjunction with the Mark-A-Zone Paint Striper, this Bead Spreader drops beads evenly and immediately on top of the paint stripe in one operation. The Mark-A-Zone Bead Spreader leaves no bare or uneven spots according to the company. The beads are imbedded

on top of the paint stripe for full reflection. The stripe will not blacken with rubber marks because tires get traction on Mark-A-Zone laid bead stripes.

Complete Mark-A-Zone Bead Spreader units are available in suitable widths for 3⅜″ or 4″ and 5″ stripes. The Bead Spreader may be obtained as a separate unit and will attach to any Mark-A-Zone paint striper. The bead tank holds enough beads for 6 quarts of paint. Beads are .037″ diameter (maximum).

The Mark-A-Zone Paint Striper with attached Bead Spreader is developed for use by municipalities and highway departments on parking lots and zones, pedestrian crosswalks, public buildings and streets. It operates at normal walking speeds. It is quick and easy to clean, has free-flowing non-clogging gravity feed, is light in weight and has few working parts.

New Hapco Catalog Available from Hubbard

Hubbard Aluminum Products Co. announces the availability of a new 32-page two-color catalog on their HAPCO line of aluminum alloy lighting standards.

Detailed descriptions, dimensions and illustrations are furnished on lighting standards with various bracket styles; flood lighting standards; lamp posts

INSTALLATION of Line Material Uni-Ballast systems provides power for the Ovalite mercury vapor luminaires at the two largest interchanges on the Olympia Freeway.

NIGHT VIEW of a most important interchange, this "off ramp" provides direct access to the Capitol, Olympia, Wash. Ample light makes these interchanges safe for night traffic.

L-M Lighting Provides Economical Solution on New Olympia Freeway

Cost of original equipment plus installation and operating economies were prime considerations in choosing L-M's exclusive Uni-Ballast(TM) series system and L-M Ovalite(TM) mercury vapor luminaires.

The newly constructed and recently opened Olympia Freeway provides a beautiful, safe artery for traffic flowing to and from the Capitol Building at Olympia, Washington. In addition, a five-mile section of primary State Highway No. 9 has also been opened to traffic. Both are built to modern freeway standards and since they are primarily in-town highways, many interchanges have been provided.

Chose L-M "Ovalite" . . . These modern thruways have been made as beautiful and safe at night as they are by day, through well-designed, well-located highway lighting. All interchanges have high-intensity lighting to assure the utmost in safety. Fill-in lighting is used in all areas where ramp connections are within 600 feet of each other. The Washington State Highway Department chose L-M horizontal-burning Ovalite mercury vapor luminaires mounted on spun-aluminum poles for this most essential lighting.

Series System at Interchanges . . . At two of the largest interchanges, the Freeway tie-in to the Capitol Building and the junction of the Freeway and Highway No. 9, the problem of supplying power to individual light standards was encountered. Because of the distances involved, a series power supply proved to be the only practical way to keep copper sizes down, and keep costs within reasonable limits.

"Uni-Ballast" System Cuts Costs . . . After careful analysis of both installation and operating economies of all available series lighting equipment, the Highway Department decided upon Line Material's exclusive Uni-Ballast system. The Uni-Ballast system is a constant current series system designed by L-M for mercury vapor lamps. This system completely eliminates the necessity of individual ballasts at each luminaire, allowing substantial savings.

L-M Lighting Application Engineering . . . The lighting of these modern expressways is typical of the many installations of L-M lighting equipment. With a complete line of outdoor lighting equipment and a qualified staff of Lighting Engineers anxious to work with you, Line Material can help you arrive at economical solutions of most of your lighting problems.

Get Complete Information . . . For complete information on the L-M Ovalite, the exclusive Uni-Ballast system, or all L-M outdoor lighting equipment ask your L-M Field Engineer or Lighting Engineer; or write Line Material Industries, Outdoor Lighting Division, Milwaukee 1, Wisconsin. In Canada: Canadian Line Materials, Division of McGraw-Edison Company (Canada), Limited, Toronto 13, Ontario. 417

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and traffic poles. The new catalog also contains specifications and general information on HAPCO features, as well as illustrations of typical installations.

For a personal copy of this new HAPCO catalog, write to: Advertising Department, Hubbard and Company, 200 S. Michigan Ave., Chicago 4, Illinois.

Union Metal Opens Kansas City Branch Office

The Union Metal Manufacturing Company, Canton, Ohio, has announced the opening of a new West Central District office, with Mr. James S. Boggs as Branch Manager. He will maintain headquarters at 7224 Village Drive, Prairie Village 15, (Kansas City) Kansas.

James S. Boggs

This new District will include the states of Kansas, Nebraska, Iowa and Missouri, where Mr. Boggs will handle the sale of all Union Metal products, including Monotube lighting poles, foundation piles and material handling containers.

Mr. A. W. Crary, Sales Representative at Kansas City, will continue in his present capacity . . . handling street lighting sales in Kansas and Western Missouri.

Mr. Boggs is a graduate of Duke University. During the war he completed 33 missions as a B-29 pilot and was awarded the D.F.C., Air Medal with 3 clusters and a Presidential Citation. Prior to joining the Union Metal Sales Department in 1956, Mr. Boggs was with the Ford Motor Company. He is married and has three children.

New "Air Ladder"

The "Air Ladder" which can be readily mounted on any truck has been introduced by Root Spring Scraper Co., 527 W. North St., Kalamazoo, Mich. It is hydraulically controlled, the hydraulic pump being powered by a 6 or 12 volt motor operating off the truck battery. No power take-off unit is involved. Platform working height is 22 feet. Safe load capacity is 500 pounds. Swing arc is 170 degrees. The operator can control the ladder from the platform.

According to the company, the "Air Ladder" is a boon to cities who report numerous time saving uses for it such as maintenance of street lighting and stop and go signals, bridge painting, tree trimming, utility pole servicing, putting up and taking down street decorations, spraying insecticides and other uses. Further information is contained in Bulletin AL-26.

Positions Available

PITTSBURGH AREA TRANSPORTATION STUDY

Position: Chief Traffic Engineer.
Requirements: Responsible for evaluating existing transportation facilities and supervising the traffic assignment-facility planning analytical processes. Should be generally familiar with origin-destination surveys. Knowledge of public transportation operations or planning is beneficial.
Salary: $7,407 to $9,011.
Apply: Pittsburgh Area Transportation Study, 14 Wood Street, Pittsburgh 22, Pennsylvania.

DOWNEY, CALIFORNIA

Position: Jr. Civil Engineer (Traffic). Under supervision of the Traffic Engineer, assist in the organization of the Traffic Engineering Office of a recently incorporated city of 100,000 people. Assist in collection of and analysis of field data on traffic volume, capacity, and accident studies; traffic signal, street lighting and channelization design and other duties.
Requirements: B.S. Degree in civil engineering from an accredited college. One year graduate traffic engineering work or experience preferred.
Salary: $544 to $661 per month—Merit System. Starting Salary above minimum if qualifications justify.
Apply: Personnel Department, Downey City Hall, 8425 E. 2nd Street, Downey, California.

CITY OF ALBUQUERQUE, NEW MEXICO

Position: Traffic Engineer.
Requirements: Degree in civil engineering plus minimum of three years' experience in traffic engineering. Degree in traffic engineering desirable.
Salary: $575 to $875 per month.
Apply: Richard W. Heim, Personnel Director, P. O. Box 1293, Albuquerque, New Mexico.

ROCHESTER, MINNESOTA

Positions: Traffic Engineer, to provide technical data and recommendations on all matters pertaining to traffic and parking problems. Responsible to City Engineer.
Requirements: Prefer Civil Engineering degree plus some experience.
Salary: Open.
Apply: Write Personnel Director, City Hall, Rochester, Minnesota, giving qualifications and salary requirements.

JACKSON, MICHIGAN

Position: Traffic Engineer—to act as assistant to the City Engineer and to perform work of more than average responsibility in the Traffic Division.
Requirements: Graduate of an accredited engineering school and some experience in traffic engineering.
Salary: $6,630 to $7,644. Regular increases, excellent fringe benefits.
Apply: Personnel Director, Room 205, City Hall, Jackson, Michigan.

WASHINGTON, D.C.

Position: Assistant Traffic Planning Engineer to study highway, mass transit and parking needs for long-range planning and for large-scale projects planning for city and regional planning agency.
Requirements: Equivalent to degree in civil engineering with three years professional experience, of which one year should be equivalent to a graduate level course in traffic engineering; Federal Civil Service GS-11.
Salary: $7,510-$8,230 with moving expenses payable.
Apply: National Capital Planning Commission, Room 7013, Interior Building, Washington 25, D. C.

JOLIET, ILLINOIS

Position: Traffic Engineer.
Requirements: B.S. in engineering from accredited institution. Specialized schooling and experience desirable. Capable of assuming full responsibility and charge of Traffic Section in the City Engineering Department. Population—65,000.
Salary: $7,000 minimum.
Apply: J. H. Rohlf, Acting City Manager, City Hall, Joliet, Illinois.

New Publications

U. S. Urban Growth Projected to Year 2000

The city will dominate every section of the country by the year 2000 according to an extensive population study, "Metropolitanization of the United States," just released by the Urban Land Institute of Washington, D. C., an independent research organization specializing in urban planning and development.

The study is the work of Dr. Jerome P. Pickard, economic geographer and population analyst. Dr. Pickard's projections show that by the year 2000, 85 per cent of the country's population, some 320 million, will live within urban areas. The expansion of the nation's 300 metropolitan areas is estimated to demand a land area of 55,000 square miles, an area equal to the state of Illinois. (A metropolitan area is an urban area including one or more adjacent cities with an area population of 100,000 or more).

(1) Ten super-metropolitan areas will contain one-third of the nation's population in forty years. Dr. Pickard sees these sectors as having the same general complexity and geographic extent as today's New York City metropolitan area.

(2) The new super-areas in the year 2000 will include a "Chesapeake and Potomac City" of 9.5 million including Baltimore and Washington, D. C.; a "Delaware Valley City" of 8.5 million centering on Philadelphia; a "South East Florida City" of 6.5 million with Miami as its hub; a "North East City" of 6.5 million around Boston; and a "Cuyahoga Valley City" of 5 million including Cleveland.

(3) Among the older super-metropolitan areas, New York is expected to continue to be the nation's greatest population center. Its population in the year 2000 is projected at 23 million; Los Angeles' 20 million; Chicago's 11 million; Detroit's 9.5 million; and San Francisco's 7.5 million.

(4) Another forty per cent of the American people will live in 285 smaller metropolitan areas of between 100,000 and 5 million population.

Presently the research director of Hammer and Company Associates, economic and business consultants of Atlanta and Washington, Dr. Pickard was formerly research director of the Economic Development Committee of the Washington Board of Trade.

His study, the product of more than two years work, offers a number of practical and immediate uses to business, financial, and governmental interests. These include forecasting and planning the needs of a growing population; relating metropolitan area growth to regional problems; enabling land-use planning to be related to potential metropolitan growth; and projecting business growth and potential demand for business services.

The 95-page publication contains 23 charts and graphs and 25 separate statistical tables.

Dr. Pickard's study is the second in the new series of "Research Monographs" being issued by the Urban Land Institute. The first was "Urban Real Estate Research" by Dr. David T. Rowlands of the Wharton School of Finance and Commerce, University of Pennsylvania.

Copies of the "Research Monographs" are $4.00 each and may be ordered from the Urban Land Institute, 1200 18th Street, N.W., Washington 6, D. C.

Planning and Development In Urban Transportation—1959

Highway Research Board — National Academy of Sciences, National Research Council, 2101 Constitution, Washington, D. C., 66 pp., $1.20

This bulletin (221) contains the six papers dealing with current developments and planning in the urban transportation field, as presented at the 38th Annual Meeting of the Highway Research Board.

Included are the following:

"Measurement of Congestion in Transportation Systems," by Lowdon Wingo, Jr.

"The Central Business District and Its Implications for Highway Planning," by Raymond E. Murphy.

"New Roads for Old Cities: European Experience," by Walter F. Bogner.

"General Planning, Urban Renewal, and Highways," by Richard L. Steiner.

"Measurement of Central Business District Change and Urban Highway Impact," by Edgar M. Horwood and Ronald R. Boyce.

"The Shoppers' Paradise Concept," by R. C. Blensly and J. A. Head.

Man and the Motor Car

Sixth Edition, Center for Safety Education, New York University, 353 pp.

This is a complete, detailed treatment of the art of good driving. Features specific drills, fully illustrated, on fundamental driving operations and tips on skillful handling of a car in all kinds of traffic situations. The effect of physical condition, attitudes, and emotions on driving is taught. Information on how a car runs, how to operate it economically, what to look for in buying a car. Traffic safety is approached as one phase of life adjustment involving good citizenship and high standards of personal performance.

American Occupations— Traffic Engineer

By Thomas J. Seburn, C. E. (Mem. ITE), Associate Director, Bureau of Highway Traffic, Yale University, New Haven, Conn. $1.00

This booklet is a handbook giving information on the traffic engineering profession, number of persons engaged in the field, salaries, qualifications desired, working conditions, advantages and disadvantages of the profession, courses of study offered, aptitudes and special skills required, and opportunities for promotion. Intended as an informational report for vocational guidance counselors, it will be of interest to all young people considering traffic engineering as a vocation.

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Publications

The following publications of the Institute of Traffic Engineers are available from the headquarters office at 2029 K Street N.W., Washington, D.C.

TRAFFIC ENGINEERING Magazine

TRAFFIC ENGINEERING is the official monthly publication of the Institute. It contains original articles of a technical and semi-technical character dealing with traffic engineering and related subjects. It also contains digests of current traffic news of unusual interest, and personal news of members.

Prices

Subscriptions ..... $4.50 a year
(20% discount to recognized magazine agencies).
Foreign Postage ....$1.25 a year, to all countries except U.S. possessions, Canada and Mexico.
Single Copies ... $0.50 each, quantities of 1 to 9.
$0.40 each, quantities of 10 or more.

PROCEEDINGS

The Annual Proceedings of the Institute contain copies of all papers presented at the Annual Meeting.

Prices

1958 Edition	$2.00	1951 Edition	$0.50
1957 Edition..	out of print	1950 Edition..	out of print
1956 Edition..	out of print	1949 Edition..	out of print
1955 Edition	0.75	1948 Edition	0.50
1954 Edition	0.75	1947 Edition	0.50
1953 Edition	0.75	1946 Edition	0.50
1952 Edition..	out of print	1945 Edition	0.50

Set of 45, 46, 47, 48, 51, 53, 54, 55, 56 and 58 issues—$5.00 per set.

YEARBOOK

The annual yearbook of the Institute of Traffic Engineers, containing a brief description of the organization, copies of the Constitution and By-Laws, and a list of the members with mailing addresses.

Price $1.00 per copy

TECHNICAL BULLETIN #1

"Adjustable Face Traffic Control Signal Head Standards."

This bulletin has been approved (October 16, 1958) as an American Standard by the American Standards Association.

Price $0.50 per copy

TECHNICAL BULLETIN #2

"Pre-Timed, Fixed Cycle, Traffic Signal Controllers."

This bulletin has been approved (October 16, 1958) as an American Standard by the American Standards Association.

Price $0.50 per copy

TECHNICAL BULLETIN #3

"Traffic-Actuated, Traffic Signal Controllers and Detectors."

This bulletin has been approved (October 16, 1958) as an American Standard by the American Standards Association.

Price $0.50 per copy

PROPER LOCATION FOR BUS STOPS

This Technical Committee report of 1954 approved as a recommended practice has been printed as a 12-page pamphlet.

Price $0.25 per copy

INDUSTRIAL PLANT PARKING

A report of Technical Committee 6-F, approved in 1959 as a recommended practice of the Institute and reprinted from TRAFFIC ENGINEERING magazine. 8 pp.

Price $0.15 per copy

A GENERAL THEORY OF TRAFFIC MOVEMENT

A reprint of the 1955 Past Presidents' Award paper by Alan M. Voorhees, Traffic Planning Engineer, Automotive Safety Foundation. 16 pp. Free.

RESEARCH TO IMPROVE TOMORROW'S TRAFFIC

A reprint of the 1957 Theodore M. Matson Memorial Award paper by O. K. Normann, Deputy Assistant Commissioner for Research, U. S. Bureau of Public Roads. 16 pp. Free.

TRAFFIC ENGINEERING IN TOMORROW'S TRANSPORTATION

A reprint of the 1958 Theodore M. Matson Memorial Award paper by D. Grant Mickle, Director, Traffic Engineering Division, Automotive Safety Foundation. 8 pp. Free.

Statement Required by the Act of August 24, 1912, as Amended by the Acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) showing the Ownership, Management and Circulation of Traffic Engineering, published monthly at Plainfield, New Jersey.

1. The names and addresses of the publisher, editor, managing editor and business managers are:

Publisher—Institute of Traffic Engineers, Inc., 2029 K Street NW, Washington 6, D.C.

Editor—David M. Baldwin, 2029 K Street NW, Washington 6, D.C.

Managing editor—Elizabeth Pinkston, 2029 K Street NW, Washington 6, D.C.

Business manager—None.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given: If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

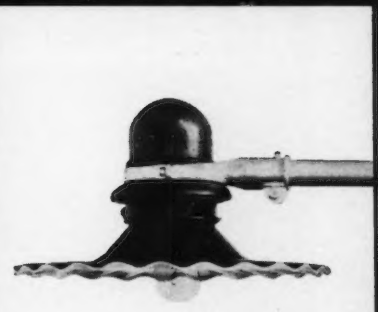
Institute of Traffic Engineers, Inc., 2029 K Street NW, Washington 6, D.C.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (if there are none, so state.) None.

Institute of Traffic Engineers, Inc.
OSMUN FORT,
Agent of the Publisher

Sworn to and subscribed before me this 24th day of September, 1959.
[Seal]
WILLIAM L. CHRISTIAN,
Notary Public of N. J.
(My commission expires April 8th, 1963)

If your lighting equipment looks like this . . .



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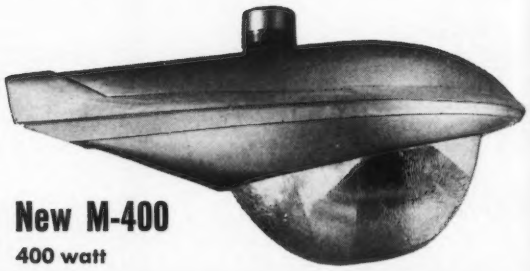

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MEMBERSHIP SURVEY

(Continued from page 24)

sponsibility, acquire more education or become registered as a professional engineer.

11. Traffic engineering is the major branch of engineering for about three-fourths of ITE members.

12. As a group, Institute members spend an average of 40% of their workday on administrative activities, with nearly 60% of their time being so spent if they are in a position of very high responsibility (Grade 9).

The points enumerated above seem to be the most important and significant ones derivable from information obtained in the 1959 ITE Membership Survey. All questionnaire data have been recorded on punch cards and will be available for further analysis should the need arise.

It is hoped that the various analyses presented in this report will provide a sound basis on which the Institute of Traffic Engineers can act in its furtherance of the traffic engineering profession.

ITE Committee 2G
MEMBERSHIP SURVEY COMMITTEE

Mr. William L. Carson, *Chairman*
Traffic Engineer
American Automobile Association
Washington, D. C.

Mr. J. Irving Knott
Supervising Highway Research Engineer
D. C. Department of Highways and Traffic
Washington, D. C.

Dr. Richard M. Michaels
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Department of Transit and Traffic
Baltimore, Maryland

Mr. Robley Winfrey, Chief
Highway Needs and Economy Div.
U. S. Bureau of Public Roads
Washington, D. C.

Advisors: Mr. David M. Baldwin
Executive Secretary
Institute of Traffic Engineers
Washington, D. C.

Mr. Carlton C. Robinson
Traffic Engineer
Automotive Safety Foundation
Washington, D. C.

% TIME SPENT ON SELECTED ACTIVITIES BY LEVEL OF RESPONSIBILITY

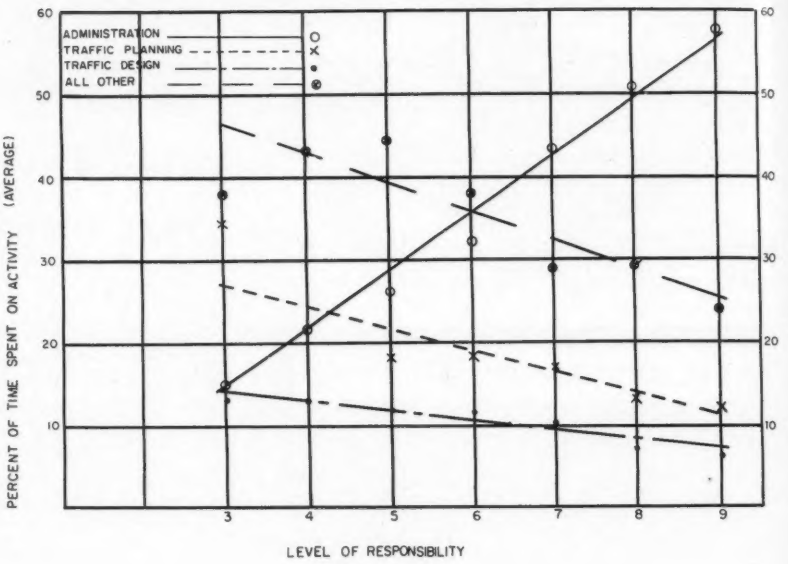

Figure 11

HIGHWAY SAFETY

(Continued from page 12)

highway safety matters is relatively limited, however, and safety research looking toward evaluation of highway design and operational features has not yet received the attention it deserves.

The American Association of State Highway Officials has recently established a Special Freeway Study and Analysis Committee, its objective being to examine closely the representative work performed thus far in construction of the Interstate System, to discuss and observe, wherever possible, any evident deficiencies with design and traffic engineers, and others, and subsequently to consider what if any changes may be appropriate in design policies or operating practices for the balance of the System. This effort will include thorough study of available accident data, and will almost surely point to useful research undertakings.

While research is the important avenue for a big break through to a new knowledge on highway safety, the available experience that can be marshalled and applied gives great promise for a significant gain in highway safety with existing knowledge. In my humble view, we have not even begun to tap these latter benefits. Better facilities within the traffic engineering profession for classification and dissemination of significant findings from systematic study of accumulated judgment and experience on selected subjects would indeed be a worthy organizational goal. Quite simply, this is the more widespread use of what we collectively know and accept about safety in the operation and design of streets and highways.

We have been thinking up to now of the responsibilities of the traffic engineering profession. I should like to turn for my closing remarks to a few responsibilities that I feel we have as individuals. The principal observation I would make is that traffic engineering is becoming a profession of specialties. Not only are there sizable differences between State and city traffic engineering organizations, but there are the separate interests or functions of planning, design and operations, which of course, can be still further subdivided. This I think might well serve to remind us that traffic engineering in its best sense is an administrative and technical task, scientific and creative in its nature, and looking toward safe facilitation of traffic for the present and the future. The task so visualized almost certainly is allied with and may even be performed as the work of the conventional design engineer, or of the planner. The cohesive central group of engineering functions that relate to the safety and facility of traffic are

(Continued on page 54)

MINUTES
ANNUAL BUSINESS MEETING

Commodore Hotel
New York, N. Y.
September 15, 1959

Call to Order

The meeting was called to order at 2 p.m. by President Sielski with approximately 200 members present.

Tribute to Deceased Members

Mr. Gravelle read the names of members who had died since the last meeting:

James Loughran—Associate
Born—August 28, 1909
Died—November 3, 1958

John W. Zimmerman—Associate
Born—January 1, 1914
Died—February 26, 1959

Hallie L. Myers—Associate
Born—January 10, 1898
Died—May 10, 1959

Walter K. Fleming—Associate
Born—June 2, 1903
Died—June 20, 1959

William O. Shrader—Member
Born—March 3, 1902
Died—August 11, 1959

C. Reynolds Weaver—Associate
Born—October 19, 1912
Died—September 1, 1959

The announcement of the names was followed by a rising tribute and minute of silent prayer.

Report of the President

President Sielski reported on his year in office. He paid particular reference to the recent Freeway Seminars, to the continuing study of District boundaries, to the proposed Technical Development Fund, to the study of membership qualifications, to the proposal to increase dues, and finally to the Workshop and the recommendations coming from its deliberations.

Appointment of Election Tellers

President Sielski appointed as election tellers S. S. Taylor (Chairman), W. H. Carsten, and R. G. Fencl. After a final call for ballots, the tellers retired to canvass the ballots.

Report of the Secretary Treasurer

Mr. Gravelle reported a total membership of 1,290 members, including the election of 22 new members at the Board meeting on September 12.

He also reported that the Institute, operating on a budget of $85,000 exclusive of Sustaining Organization funds, was staying within the budget. He cited the principal sources of income: advertising, dues, and registration fees.

It was moved, seconded and VOTED to accept the report.

Report of the Executive Secretary

The Executive Secretary reported briefly on headquarters operations. He also announced another Freeway Seminar scheduled for November 16, 17 and 18 in Denver.

Report of Insurance Trustees

Mr. Prisk, Chairman of the Trustees, reported progress of the life insurance program, now in its third year, with 375 participants and a total of $90,000 in claims paid.

He advised of recent actions by the Trustees prohibiting new enrollments by those 60 years of age or over, and restricted enrollment for those 55 to 60 years of age. He also told of new benefits for accidental death or dismemberment, and announced that a new rate schedule was to go into effect on February 15, 1960. He encouraged members to join the plan during the current enrollment period, or later on evidence of insurability.

He closed by reporting that the plan was working well and forecast a successful future for it.

In response to questions from the floor, it was brought out that the amounts of insurance benefits could be increased by action of the Trustees (applying to all policies) but that rates could not be lowered even though physical exams were required (because of legal restrictions).

Report of Resolutions Committee

Mr. Hurd presented six proposed resolutions, which were read. It was moved, seconded and VOTED to adopt each of these, dealing with transportation planning, international aspects of traffic engineering, freeway seminar speakers, traffic engineering training, research, and the local arrangements committee.

Mr. Marsh, from the floor, presented a resolution relating to inter-vehicular communication. It was moved, seconded and VOTED to adopt this resolution.

In response to a question by Mr. Osborne from the floor, it was pointed out that the Automotive Safety Foundation had been thanked in a resolution last year for their financial help in the seminar program.

Report of Local Arrangements Committee

Mr. Quimby for the local committee expressed his thanks to all his committee members, and indicated that the meeting itself was in reality his report.

Amendments to Constitution and By-Laws

Mr. Gravelle read a petition duly signed by at least five voting members proposing to amend Section 2 of Article II of the Constitution, to make Associate Members eligible for election as Directors. After a motion, duly seconded, to transmit the proposal to the membership for mail ballot, an amendment was moved by Mr. Dondanville, seconded by Mr. McNeil, to add the following words:

> "An Associate Member nominated for office of Director must meet all professional qualifications and hold a position which would qualify him for transfer to the grade of Member during his first term of office. The Membership Committee shall certify that these qualifications are met. No nomination of an Associate Member for the office of Director may be placed on the ballot more often than once in four years from any one district."

It was VOTED to adopt the amendment.

Mr. Wallen, from the floor proposed an amendment to permit Junior Members to vote. The chair ruled the amendment pertinent, but was over-ruled by the membership.

The original motion was VOTED as amended.

Mr. Gravelle read the Board's proposal to increase the dues. It was moved and seconded that this proposal be transmitted to the membership in unamended form, and it was so VOTED.

In discussion, support for the proposal was voiced by representatives of the Washington Section, the Midwest Section, the Indiana Section, the Missouri Valley Section, the Southern Section, and the Mid-Atlantic Section. Mr. Fisch urged that members qualified for transfer to a higher grade do so and thus increase the dues income. Mr. Prisk moved, and it was seconded and VOTED that it be the sense of the group present that they favored the proposal to increase dues.

Workshop Recommendations

Mr. Forde reported a series of specific proposals by the Midwest Section for modifications or additions to the published recommendations. The chair announced that all suggestions would be turned over to a new Workshop Committee.

Mr. Marston reported on work to date by the Board committee studying District boundaries, describing five possible plans which will be submitted to the Sections for comment, then returned to the Board for action, and eventual submission to the membership.

A number of Sections reported opinions on the subject, some favoring one of the present proposals and others opposed to all. It was pointed out that all comments would be considered as noted earlier.

1960 Annual Meeting

Mr. Olmstead, for the Chicago arrangements committee, read a letter of invitation from Governor Stratton of Illinois. It was moved, seconded and VOTED that this letter and other official letters of invitation be made a part of the records of the meeting.

Report of Annual Inventory Committee

Mr. Baerwald presented a report for his committee.

Election of Officers and Directors

Mr. Taylor, for the tellers, reported the canvass of ballots, made in accordance with the By-Laws, showed the following results:

For President:	
Edward G. Wetzel	632
For Vice President:	
Alger F. Malo	617
For Vice President:	
Gordon K. Gravelle	593
For Secretary-Treasurer:	
Robert A. Burch	334
William R. Marston	314
For Director, District 1:	
Fred W. Hurd	102
For Director, District 2:	
O. K. Normann	92
For Director, District 4:	
Evan E. Olmstead	69
Joseph J. Feuchter	30

It was moved, seconded and VOTED that the ballots be destroyed, and Messrs. Wetzel, Malo, Gravelle, Burch, Hurd, Normann and Olmstead were declared duly elected to the respective offices.

The chair then introduced the newly elected members of the Board of Direction, as well as Messrs. Barton, Greer and Head who are carry-over members. He then recognized and thanked the two departing Board members, Mr. Gittens and Mr. Marston, and paid tribute to Mr. Havenner who also leaves the Board.

Mr. Wetzel assumed the chair and made a few brief remarks about the Institute and its plans. The membership present then gave a rising vote of thanks to Mr. Sielski in recognition of his year as President.

Adjournment

There being no further business, the meeting adjourned at 4:25 p.m.

Respectfully submitted,
DAVID M. BALDWIN
Executive Secretary

RESOLUTIONS

29th Annual Meeting
New York, N. Y.
September, 1959

Resolution No. 1

WHEREAS the Institute of Traffic Engineers recognizes the trend toward urbanization and increasing concentrations of traffic in metropolitan areas, and

WHEREAS adequate transportation planning for metropolitan areas requires the combined talents and cooperative actions of all agencies having transportation, or related, functions, and

WHEREAS the overall solution of the metropolitan transportation problem requires the consideration of all modes of transportation, therefore, be it

RESOLVED that the Institute of Traffic Engineers as an organization and through its individual members will foster and develop increased mutual understanding and closer working relationships with other groups, such as planners, transit personnel and economists, and be it

FURTHER RESOLVED that we, the members of the Institute of Traffic Engineers in our work with these other groups will welcome and will foster comprehensive urban transportation planning to embrace all modes of transportation.

Resolution No. 2

WHEREAS good transportation tends to create higher social and economic levels which promote common understanding among the people of the world, and

WHEREAS the Institute of Traffic Engineers is aware of the increasing demand throughout the world for the application of sound traffic engineering principles, and

WHEREAS the Institute of Traffic Engineers and professional transportation groups in other countries have the benefit of research and experience which may be mutually helpful in solving traffic problems, now therefore be it

RESOLVED that the Institute of Traffic Engineers take steps toward increased internationalization of professional traffic engineering standards, and encourage an exchange of traffic engineering information and services to governments and technical groups in all countries.

Resolution No. 3

WHEREAS the Freeway Operations Seminars, sponsored by the Institute of Traffic Engineers, have met with outstanding national success and are demonstrating their value, and

WHEREAS this series otf regional meetings would not have been possible except for the contributions in time and effort of the highly qualified individuals who prepared materials and presented the programs, and

WHEREAS the great success of the Seminars is evidence of the high quality of the material presented expertly by those who participated in the programs, now therefore be it

RESOLVED that the Institute of Traffic Engineers expresses appreciation and thanks all of those individuals who participated in the Freeway Operations Seminar Programs, with special recognition of the following Institute members, who made major contributions to the Programs of more than one Seminar:

Arnold G. Fisch

Joseph E. Havenner
C. J. Keese
Donald W. Loutzenheiser
Alger F. Malo
Burton W. Marsh
Charles M. Noble
O. K. Normann
William H. Polkinghorn
Edmund R. Ricker
Carlton C. Robinson
George W. Webb
Edward G. Wetzel

and be it

FURTHER RESOLVED that the President of the Institute of Traffic Engineers is directed to transmit suitable reproductions of this Resolution to each of the aforementioned members in testimony of the valuable service they have rendered to the Institute of Traffic Engineers and to the profession of traffic engineering.

Resolution No. 4

WHEREAS there is an increasing unsatisfied demand for the services of properly qualified personnel to apply the principles of traffic engineering at all levels of government, and

WHEREAS the objectives of the Institute of Traffic Engineers may be fully achieved only when a sufficient number of qualified engineers and aides are properly trained to cope with the traffic problems of the nation, now therefore be it

Resolved that the Institute of Traffic Engineers encourage all engineering schools of recognized standing to include traffic engineering courses in their undergraduate and graduate curricula, and be it

FURTHER RESOLVED that members of the Institute of Traffic Engineers through their local Sections promote and take part in the development and conduct of special traffic engineering conferences for qualified persons who are engaged in traffic engineering work.

Resolution No. 5

WHEREAS the report by the Secretary of Commerce on the "Federal Role in Highway Safety" calls for a substantial bolstering of the research effort now being applied to the traffic accident problem, and

WHEREAS the Institute of Traffic Engineers also recognizes the need for increased research relative to traffic operational safety and efficiency, and

WHEREAS highway transportation affects many different disciplines such as physiology, psychology, sociology, economics and engineering, now therefore be it

RESOLVED that the Institute of Traffic Engineers urges governmental agencies, universities, foundations and other interested groups to increase their support of and activities in fundamental and applied traffic operational research, and be it further

RESOLVED that the Institute of Traffic Engineers extend its support to those recommendations of the aforementioned report designed to accelerate, strengthen and coordinate research activities in the traffic safety field.

Resolution No. 6

WHEREAS this 29th Annual Meeting is contributing substantial technical information to its delegates and its entire program is both enjoyable and stimulating, and

WHEREAS the large amount of time and effort devoted to the arrangements of accommodations and activities of this meeting are recognized and appreciated, now therefore be it

RESOLVED that a sincere expression of deep appreciation be extended to Warren S. Quimby, Chairman of the 1959 Annual Meeting Executive Committee, and to the members of the Local Arrangements Committee, their wives, and to others for their unstinted and loyal contributions toward achievement of the outstanding success of this Annual Meeting.

Resolution No. 7

WHEREAS growing traffic volumes and speeds on freeways and other highways make it increasingly more important, for traffic safety and efficiency, that there be much more effective inter-vehicular communication, and

WHEREAS it is important to be certain if the vehicle ahead is being braked or is proceeding at a speed much slower than the traffic pace, and if a vehicle is forced to stop on the pavement or shoulder of a freeway, it is important that following drivers know that it is stopped, and

WHEREAS if a vehicle is disabled, a universal distress signal is highly desirable, and

WHEREAS an effective, easily understandable intervehicular signal system must be developed to provide most needed information, which system will materially affect traffic operation, now therefore be it

RESOLVED that such a system should be developed as a joint project of majorly interested organizations, with the Board of Direction of the Institute establishing a list of such organizations, and contacting each of them as to its interest and willingness to join in such a joint project.

* * *

The foregoing resolutions, Nos. 1 through 7, ADOPTED by the Institute of Traffic Engineers at its annual meeting held in New York, New York, on September 15, 1959.

Attest: DAVID M. BALDWIN
Executive Secretary

ANNUAL REPORT OF PRESIDENT

Gentlemen:

I am happy to submit the report of the shortest term of any President of this society. However, my term of ten months has been a most memorable one to me. Since becoming a member in 1940, I have not missed an annual meeting of the Institute. This is not meant as a flattering gesture, but rather an indication of my deep interest in the affairs of the Institute. For that reason, I hold much respect for this office. I hope that my report to you gives some indication of my stewardship to the membership of this organization.

Freeway Seminars

I hold no claim to the successful series of Freeway Seminars that have been held throughout the country. Joe Havenner, in his term as President, conceived this program and put it into effect. I merely brought the program to its completion during this past year. A total of eleven seminars were held in many parts of the country. I regard this as one of the most important programs that the Institute has conducted for it not only enabled us to grasp a better understanding of the problems in conjunction with the operation of freeway seminars, but it also gave us much needed recognition by the highway engineering profession. This was best exemplified by the statement made by Mr. Ralph Bartelsmeyer, President of the American Association of State Highway Officials, which is as follows:

"I think we should all be grateful to the Institute of Traffic Engineers for initiating this first series of seminars on freeway operation. I am confident that this is only a beginning and that subsequent meetings of this type will follow. I am cer-

P & K TRAFFIC CONTROL REPORT

TOP PHOTO: Denver, Colo.; Combination lighting & traffic signal mast arm standards.

BOTTOM PHOTO: Orange, N. J.; Twin trombone arm traffic type standard.

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tain you will benefit from your sessions and discussions with the excellent group of speakers you are privileged to have. I think the informal method of presentation and your evening bull sessions will facilitate and enhance your opportunity to learn.

"The Institute is to be commended for the manner in which it has selected those who are participating in this meeting—it is the first time that the top level personnel of this region who are and will be involved in all phases of freeway operations and planning have ever been brought together in a common meeting place.

"The design, construction and operation of freeways is in a constant state of change. The limit on our individual time and energy prohibits each of us from attempting to solve every problem, or to perform every improvement alone.

"You are the final link in the long procedure required to bring a freeway into traffic usage. The ability of the planner, economist, designer and builder are all evaluated to a large extent by the ability you have to obtain the optimum of performance from the facilities you control. The rest of us in the highway field are depending on you to uphold and enhance our collective reputations."

District Boundaries

The Board of Direction has given much consideration to the change in district boundaries which have been in existence for a number of years. Since the adoption of these boundaries, our membership has tremendously increased and with it, additional assignments to the Board of Direction. We are in dire need of additional men on the Board who could help to carry on the vast amount of work that must be done for an ever expanding and growing Institute. I realize the many ramifications that exist regarding the changing of any district boundary. I hope that every member will regard this not as a threat to any section but as a means of helping the entire membership. This matter will receive considerable attention at today's annual meeting.

Technical Development Fund

Another project with which the Board concerned itself was the creation of the Technical Development Fund. It has long been felt that if the Institute is to technically progress, it must develop new ideas and methods for correcting traffic conditions. In the past, most of this work has been done through committees. Experience has shown that such a procedure is slow, unproductive, and difficult to manage. For that reason, we have established this fund to which we will ask organizations to give their financial assistance. The first step in this direction was the segregation of the Sustaining Organization Fund from our budget and its allocation to this newly established fund. We are hopeful that the contribution to this fund will be greatly accelerated over the years. The fund will be used for such matters as financial assistance to the Technical Council, printing of technical reports, and for research projects to be conducted by universities or by special committees financed by the Institute.

Membership Qualifications

In the past several years, changes have been made to raise the standards of our membership qualifications. This is in keeping with the progress the Institute is making. Further changes were developed during the past year—some of which will be presented at this annual meeting. Others will be recommended in the future.

Dues Increase

In conjunction with all of the necessary changes and developments that are underway to develop a better and stronger Institute, the Board of Direction again is appealing to the membership to support a most necessary dues increase. With the creation of the Technical Development Fund, plus the many programs we have in mind for this Institute, we hope that all members have a clear understanding that such an increase is for the good of each individual member. Please support the dues increase.

Highland Park Workshop

This is perhaps the most important matter in which I have interested myself since becoming President. The many replies I received in my letter prior to becoming President indicated to me that the membership of our organization felt that much could be done to improve many of our operations. Furthermore, because of the tremendous increase in urbanization and vehicular traffic registrations, it is apparent that the Institute stands at the threshold of a golden opportunity. However, if it is to take advantage of the opportunity, then it must be prepared. It was for that reason that I called a Workshop of 55 dedicated persons to make recommendations for meeting this challenge. I am much indebted to all of those who volunteered their service and at this time, I should like to have them stand up and be recognized . . .

I should like to talk a little bit about the Workshop recommendations. The action program of the Workshop is aimed at four areas:

(1) You as an individual member.
(2) Your Section.
(3) The Technical Council.
(4) The Board of Direction.

Let's consider the recommendations pertaining to you: It was the consensus, among other things, that our individual members are not doing enough to improve their technical ability. To this end, it is suggested that each member expand his activities to include other phases of traffic engineering work. This might be a good time for you to appraise yourself as to whether or not you are keeping in step with changing times. Ask yourself these questions: When was the last time you took some specialized courses in traffic engineering or its related fields? When was the last time you seriously read a technical article in Traffic Engineering magazine or some similar technical journal? When did you conduct a research study and present your findings to our members either through publication or presentation at the annual meeting? When did you last volunteer your services for committee assignments on the Technical Council? There are many recommendations in the Workshop Report directed at the individual's role in helping to meet our objective.

The next group that can express leadership is the Sections, and here is where I hit some sore spots. I don't intend to pull any punches because of my sincere effort to present Institute problems to you and ask for your help. In the first place, loyalty to any section is wonderful, and no one can criticize you for that. We're all proud of our individual section's work—but don't let this pride interfere with our main objective—*what can your Section do to help build a stronger and better Institute*? If we are going to fight, let's fight to see who can get the best technical report, the best research project, the best committee report, the best

technical know-how. This is the type of help we can use on our unified team. I strongly urge you to review the recommendations pertaining to what the sections can do to help meet our challenge.

The third area where recommendations are aimed is at our Technical Council. The recommendations contained in the report are fresh approaches to problems that have long plagued our Institute.

The fourth area, and perhaps one of the most important, is the Board of Direction. It will have to wrestle with many of the suggestions referred to that body for consideration. Personally, I believe that these recommendations will do much to solidify the thinking of Board members. I would urge you to express your opinion to your officers or directors regarding any of the Workshop recommendations. By this process, board members will have a better appreciation of the desires of the membership.

I have previously asked that each section president hold a special summer session to review the Workshop recommendations. I hope that during this meeting, many of these will be given consideration.

Appreciation to the Board of Direction and Others

I should like at this time to express my deepest appreciation to all of the members of the Board of Direction who have given their time in the interests of the Institute. Few people realize the tremendous amount of responsibility and work that falls upon the shoulders of our Board of Direction. I should like to introduce them to you at this time. I should also like to pay special recognition to the members of the Technical Council who also have devoted much of their time to the development of the technical advancement of our profession. I should like to have every Technical Council member rise and be recognized at this time.

Appreciation to Local Committee

On behalf of the Board of Direction and the entire membership, I should like to give special recognition to all of those on the local committee who have made this conference a success. We appreciate the time and effort that these local committees must spend in order to successfully conduct an annual meeting.

Dave Baldwin

Last of all, but not least, is my sincere appreciation to our very talented Executive Secretary, Dave Baldwin. He has been of tremendous assistance to me throughout the past year as well as to other members of the Board. In addition to this, he has administered our headquarters in a manner that is of great satisfaction to all of us. I should like to recognize him at this time.

Conclusion

During my term of office, I have traveled approximately 20,000 miles for the Institute. It has been my purpose to promote the interests of our profession wherever it was possible to do so. I hope that, among other things, we will continue to work together in the interests of our profession and, by doing this, we will be able to meet any challenge that will be coming forth in the future.

OFFICE OF THE GOVERNOR, SPRINGFIELD, ILL.

August 14, 1959

To The Members
Institute of Traffic Engineers
Dear Friends:

I am told that your organization has been invited to hold its 1960 convention in Chicago. Both officially as Governor of Illinois and personally I wish to join cordially in that invitation.

You no doubt are aware of the unequalled facilities that Chicago offers for the comfort, convenience, and entertainment of convention visitors. Its central location, its easy accessibility by all media of transportation, and its traditional hospitality have helped make it the recognized convention capital of the nation.

My hope is that we of Illinois will have the opportunity to demonstrate to your membership why Chicago has won that distinction. I also extend sincere good wishes for the success of your forthcoming meeting.

Sincerely,
WILLIAM G. STRATTON
Governor of Illinois

OFFICE OF THE MAYOR, CHICAGO, ILL.

August 12, 1959

To The Members
Institute of Traffic Engineers

On behalf of Chicago, I am happy to extend greetings to the members of the Institute of Traffic Engineers, along with my cordial invitation to meet in our city on the occasion of their 1960 convention.

As the nation's leading convention center, Chicago is famous for its hospitality and unexcelled accommodations for visitors. Our hotels, transportation facilities and entertainment attractions are all unequalled and assure your meeting of great success.

We are highly honored by your selection.

Sincerely,
RICHARD J. DALEY
Mayor

1958 - 59 REPORT of the EXECUTIVE SECRETARY INSTITUTE OF TRAFFIC ENGINEERS

Membership

The membership growth of the past several years continued this year. With the new members elected at this meeting, we are at the 1300 mark. New applications continue to come in at a high rate.

Through the activity of a committee of the Washington Section, we will soon know more about our members—their employment, their salary scale, the professional status, and many other items. Initial reports are that traffic engineers are as well or better paid than other engineers with comparable education and responsibilities for instance.

Of interest too is the interest shown toward developing more international contacts within and without our membership. Work is underway toward a possible international meeting, as an example.

Finances

We continue to hold our own financially—despite increased costs of operation. Paper, printing; every kind of service costs more than it did. More members mean greater expense—expense not balanced by dues income, unfortunately.

More services will mean that more income is needed, which explains why the Board is asking you again to approve a dues increase. As a first step, we need more clerical help in the office. Three girls are carrying a substantially greater burden than three girls did in 1956, and it is not humanly possible to absorb any more work. These girls deserve much credit for their devotion and effort.

Magazine

We are now making use of the part-time services of an editor in an effort to lighten the routine office responsibilities of the Executive Secretary. It is still too early to see the improvement we hope for in the publication itself—but the reduction in work load on the Secretary has been very helpful.

Advertising has increased, partly through the help of three ad representatives, who have done yeoman service. We expect that this upward trend will continue unless there is a major business recession.

Technical Activity

The Technical Council has been hard at work this year, with fewer but more productive committees. It is still too early to report what percentage of these groups will produce useful reports, but we are confident the figure will be high.

A highlight of the year was the successful series of freeway operations seminars begun last year. Seven were held this year, for a grand total of eleven. Now plans have been made to hold one more—in Denver on November 16, 17 and 18. The invitation list for this meeting is nationwide—if you missed the one in your area, plan to attend the Denver meeting.

Sections

Local Sections have been more active this year, it would appear, perhaps as a result of the workshop called by President Sielski in Highland Park in May. More meetings to discuss Institute affairs and Institute policy have been held than ever before — all of which is a most important sign for the ultimate growth and development of the organization.

Miscellaneous

Many other activities have occupied the time of headquarters personnel. Our insurance program, which has resulted in over $80,000 paid out to widows of members, has been a time-consuming but a rewarding duty.

Contacts with other organizations, such as ASCE, IMSA, IACP, AASHO, the President's Committee for Traffic Safety, and many others have been made. This portion of our program, incidentally, needs to be expanded.

I cannot close without expressing my personal thanks to the officers and directors for their confidence and support during the year. Without this, and

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City of Chicago, Ill.	City of Petersburg, Va.
City of Cleveland, Ohio	City of Port Jervis, N. Y.
City of Columbus, Ind.	City of San Jose, Calif.
City of Columbus, Ohio	City of Sioux Falls, S. D.
City of Detroit, Mich.	Town of Southington, Conn.
City of Evanston, Ill.	City of South Orange, N. J.
City of Findlay, Ohio	City of Superior, Wisc.
City of Grand Rapids, Mich.	City of Vincennes, Ind.
City of Ithaca, N. Y.	City of Watertown, N. Y.

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without the help of numerous individual Institute members, the work could not have gone forward.

Finally, I extend again to all of you an invitation to visit your headquarters office in the Nation's Capital—and to call on us any time we can be of help to you.

Respectfully submitted,
DAVID M. BALDWIN
Executive Secretary

Board of Direction Meets in New York

The Board of Direction met September 12 and 13 in New York, and then again on September 15 after the Annual Business Meeting and the election. The September 15 meeting was principally an organizational meeting for the new Board, with a number of committee appointments made.

Important actions by the Board included the following:

1. Elected 22 new members—13 Junior Members, 8 Associate Members and one Member.

2. Advanced 18 members in grade—16 Junior to Associate Member and 2 Associate Member to Member.

3. Declined applications for admission in 15 cases, and refused to transfer 6 members. Took no action on 6 other cases pending additional information.

4. Accepted in principle a report from the Board's Membership Qualifications Committee proposing major changes in membership terminology and some changes in qualifications, and agreed to review a formal proposal for By-Laws changes at the January meeting.

5. Accepted in principle a report from the Board's Committee on Sustaining Organizations proposing the establishment of a "Technical Development Fund," and authorized a small planning group from the Institute and industry to work out the details.

6. Received a report from the Board's District Boundaries Committee, and directed that it be sent back to the District Directors for study and comment within the Districts, for final action by the Board in January.

7. Heard that plans are progressing for an international delegation to meet in Washington in 1961 at the time of the Annual Meeting there.

8. Heard that membership of the Institute on September 4 totalled 1,268—composed of 287 Juniors, 583 Associate, 334 Members, 53 Affiliates, 7 Honorary Members, and 4 Inactives. Voted to re-instate one Inactive—J. W. A. Bollong—as a Member.

9. Received a petition from 26 Florida members and authorized the formation of the Florida Section.

(10) Voted that Local Sections not be permitted to accept "Local Sustaining Organizations."

11. Voted that the Chicago Committee not be authorized to have exhibits at the 1960 Annual Meeting.

12. Heard that the Technical Council had developed a series of proposals for revision of the Uniform Vehicle Code in the light of discussions at the recent Freeway Seminars.

13. Agreed to request the Federal Communications Commission to not unduly restrict traffic control use of radio in a pending docket of the Commission, and authorized a special committee to help prepare a full presentation for the FCC in the matter.

14. Agreed to the appointment of a small group to look into the possibility of a Joint Committee on Freeway Traffic Operations. Heard that a final Freeway Seminar would be held November 16-18 in Denver.

15. Accepted an invitation from Denver for the 1962 Annual Meeting.

Nominating Committee Appointed; Other Committees Named

The Board of Direction at its meeting on September 15 in New York named the 1960 Nominating Committee. This committee will select the slate for the next election, including candidates for 4 officer positions and District Directors for Districts 3, 5 and 6.

Named chairman of the committee was Thomas J. Seburn. Representing District 3 is William L. Marvin of Lansing, Michigan; representing District 5 is Karl A. Bevins of Atlanta; and representing District 6 is A. L. Hutchison of Los Angeles. The member-at-large is D. Grant Mickle.

Four other committees were appointed by President Wetzel and approved by the Board, as follows:

Resolutions Committee

O. K. Normann, Chairman
M. J. Gittens
C. C. Robinson
W. S. Smith
K. S. Vaughan-Birch
Wayne N. Volk

Past Presidents' Award Committee

M. C. Sielski, Chairman
J. C. McMonagle
F. B. Crandall
B. W. Marsh
Donald M. McNeil

Membership Committee

L. E. Bender, Chairman
George J. Fisher
Eugene Maier
Ellis L. Mathes
John H. Mitton

Policy Committee

M. C. Sielski, Chairman
All living Past Presidents, members.

JOB CHANGES

James H. Cox — formerly Designer, Metropolitan Surveys & Studies with the Indiana Highway Department; now Assistant District Engineer of Traffic with the same Department in Greenfield, Indiana.

* * *

Daniel S. Hammond—formerly Chief Engineer with Bruce Campbell & Associates in Boston, Massachusetts; now Highway Engineer for the U. S. Bureau of Public Roads in Albany, New York.

* * *

Robert A. Hubbard—formerly District Traffic Engineer with the Virginia Department of Highways in Bristol, Virginia; now Associate Traffic Engineer for the same Department in Richmond, Virginia.

* * *

Giorgio Pellegrini—formerly Research Assistant in the Highway Department of the University of Rome, Italy; now with the Technological Institute of Northwestern University in Evanston, Illinois.

* * *

Charles P. Strong—formerly Assistant Highway Engineer with the California Division of Highways; now Assistant Traffic Engineer in the Transportation & Traffic Engineering Division for the City of San Diego, California.

* * *

Theodore M. Vanderstempel — formerly Traffic Engineer for the City of Pontiac, Michigan; now Traffic Engineer for the City of Saginaw, Michigan.

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5. 6. 7. 8.

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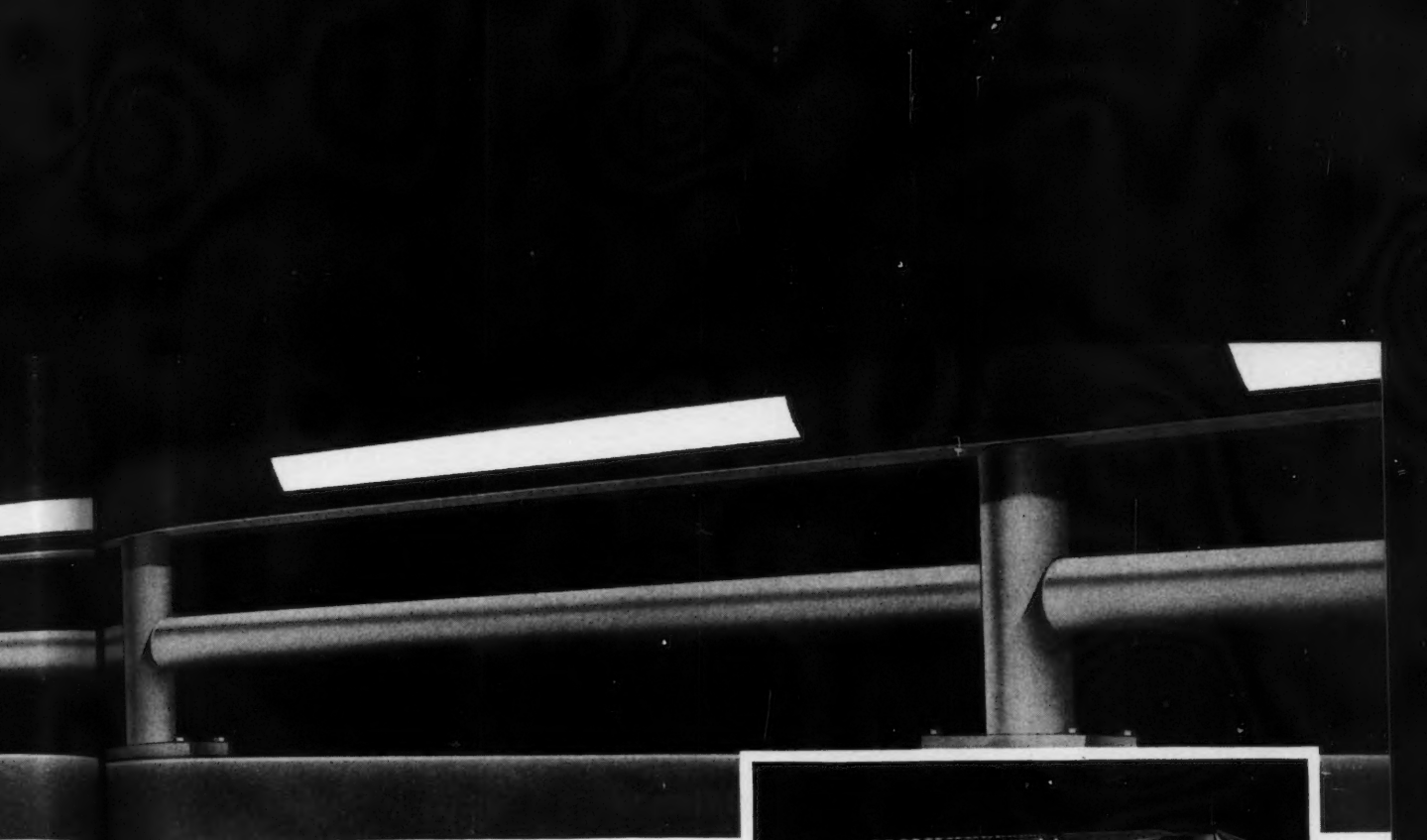

For greater beauty, safety, and efficiency on bridges, overpasses, elevated highways and highway ramps

A fluorescent luminaire combining lighting fixture, bridge rail, and wiring channel all within the rail itself is announced by General Electric. The unit is especially designed for use on applications where mounting and installation pose a problem.

Working with Michael Flynn Manufacturing Company, fabricators of the aluminum rail, G-E engineers developed this unique 12-foot unit, which houses two 42-inch lamps. Built into the rail are all components of the fixture—reflector, socket, lamp, shatter-resistant acrylic window, ballast and wiring channel. The top section of the rail opens to allow easy access to the luminaire and ballast.

These are the benefits with this new concept in lighting:

- Big savings on installation and wiring—simply string out wire, open rail cover, and lay wire in channel.
- Uniformity of light along the roadway.
- Elimination of glare.

Technical Council Meets in September

A meeting of the Technical Council was held in New York on September 12 preceding the Annual Meeting.

Important action by the Council included a review of a sub-committee's proposal for necessary revisions in the Uniform Vehicle Code arising from discussions at the Institute's Freeway Seminars.

Points considered as needing consideration by the National Committee on Uniform Traffic Laws and Ordinances included:

1. A legal definition of the significance of edge lines;
2. Requirement for a signal on changing lanes;
3. A time requirement instead of distance for duration of a signal;
4. Prohibition of false signals or signals not cancelled;
5. Authority to prohibit changing lanes;
6. Authority to prohibit use of median cross-overs;
7. Recognition throughout Code of "dual-dual" highways;
8. Authority to prohibit public use of special access points;
9. Authority to close ramps by administrative order;
10. Broadening existing section prohibiting certain types of traffic from freeways;
11. Exclusion of merging and diverging areas from the intersection definition, plus consideration of movements at these points as "changing lanes;"
12. Exclusion of freeway from definition of urban district;
13. Review of present definition of "controlled access roadway" as opposed to "freeway";
14. Authority to vary speed limits to recognize factors of traffic, weather, etc.;
15. Prohibit backing on freeways;
16. Require two simultaneous flashing lights (stop or turn signal lamps) on the rear of vehicles stopped in traffic or on the shoulder at night on freeways or rural highways;
17. Authority to adopt lighting standards for maintenance and service vehicles as well as snow removal equipment; and
18. Provision for a deceleration light or signal. Other suggested items included: revision of rule for passing on the right; a distress signal; provision for reversible one-way movements; and revision of the present "drive to the right" section.

In addition, the Council heard reports of Handbook progress, and reviewed progress of eighteen technical committees.

Coming Events

January 11-15—HIGHWAY RESEARCH BOARD—
Sheraton-Park Hotel, Washington, D. C. Contact: Highway Research Board, 2101 Constitution Ave., Washington 25, D.C.

January 11-15 — SOCIETY OF AUTOMOTIVE ENGINEERS
Annual Meeting, Sheraton - Cadillac & Statler Hotels, Detroit, Mich. Contact: SAE, 485 Lexington Ave., N. Y. 17, N.Y.

March 6-8—SOUTHERN SAFETY CONFERENCE—
Jacksonville, Florida. Contact: W. L. Groth, P.O. Box 8927, Richmond, Va.

September 12-16—INSTITUTE OF TRAFFIC ENGINEERS—
30th Annual Meeting, Edgewater Beach Hotel, Chicago, Ill. Contact: ITE, 2029 K St. N.W., Washington 6, D. C.

- Greater visibility in fog, rain or snow.
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All light from units is directed on the roadway at low level—roadway limits and median strips are clearly defined.

GENERAL ELECTRIC

ANNUAL REPORT TRAFFIC ENGINEERING ADVISORY COMMITTEE ANNUAL INVENTORY OF TRAFFIC SAFETY ACTIVITIES

September 15, 1959

The Traffic Engineering Advisory Committee to the Annual Inventory of Traffic Safety Activities was reactivated under the Administrative Division of the Institute in April, 1959. In asking members to serve on the committee every effort was made to secure an adequate geographical representation as well as adequate representation from the various population levels of the different governmental units which participate in the inventory program.

As presently constituted, the Committee consists of the following members as classified by area of representation:

Cities (14)

J. E. Angell	F. G. Jordon, Jr.
M. J. Bouman	J. D. Lee
J. H. Bunch	E. Maier
C. A. Clinard	W. R. Marston
M. J. Gittens	J. H. Mitton
A. W. Gove	E. L. Simm
C. E. Haley	T. T. Wiley

States (4)

R. A. Burch	J. V. Musick
W. L. Kessler	B. B. Twombly

County (1)

D. J. Hanson

Miscellaneous

J. E. Baerwald, Chairman
H. Porter, Jr., Secretary
F. Potenza, Ass't. Secretary

The committee held an organizational meeting in Chicago on July 16-17, 1959. Ten members and three guests were present. Following a discussion of the background of ITE participation in the Annual Inventory Program, the committee discussed committee operating procedures and reviewed and amended each of the inventory forms and evaluation schedules.

An open meeting of the committee was held on September 15th, during the Annual Meeting in New York City. Twelve members and about 30 guests were present and participated in the discussions on the inventory forms, evaluation schedules, and the general inventory program. The committee considered the revisions made in the various inventory forms during its July meeting and after slight revisions, authorized the printing of the 1959 inventory forms.

Although there seems to be no question among the committee members concerning the Institute's advisory participation in the inventory program, there are considerable differences of opinion concerning the scope of the Institute's participation. These differences are being studied and a report will be presented to the Board of Direction within the next six months.

Respectfully submitted,
JOHN E. BAERWALD,
Chairman

Booklet On Highway Lighting

"Guide to Nightime Highway Safety," a new booklet published by the Street and Highway Safety Lighting Bureau, 1400 Terminal Tower, Cleveland 13, Ohio contains a brief history of lighting, and points out the need for highway lighting as an important safety factor. The booklet contains tables showing reduction in traffic deaths following improved lighting, and points out the need for legislation which will make highway lighting possible on the Interstate Highway System.

HIGHWAY SAFETY

(Continued from page 42)

normally the responsibility of the principal traffic engineering official. With this viewpoint, as distinct from the concept of the traffic engineer who is confined exclusively to the operating function, the traffic engineer assumes the team man role, and traffic engineering takes on the qualities of a mature profession of broader, more useful service of street and highway transportation. Traffic engineering acceptance can usually be cultivated more readily through evolution than in revolution.

The need to make traffic engineering decisions with a conscious regard for their impact on safety is a point applicable to our individual responsibilities as well as to the profession. The safety aspects of highway and traffic engineering are badly overworked by the public, but it is often also true that engineers have sold themselves short by not displaying more vigorous interest in traffic safety programs and betterments.

Despite my years in traffic research, much of which has dealt directly or indirectly with traffic safety, I firmly believe that, without one additional scrap of research knowledge, a startling reduction, perhaps as much as 25 per cent, could be effected in the Nation's traffic accident toll, *if* we could just apply what we now know. This is obviously not said in condemnation of needed research, but in encouragement of more rapid distribution and use of the best knowledge already available on highway safety.

The Institute of Traffic Engineers and its members are today on the threshold of a great opportunity in traffic safety. From the vast body of knowledge and experience you represent, improved laws can be drafted, better accident reporting and analysis can be devised, clues to accident causes can be uncovered, and safer highway design and operating practices can be evolved through added recognition of human engineering principles and intelligent use of existing knowledge. Through such professional service, traffic engineering will meet its primary challenge and effectively aid in the achievement of safer highway travel. In these respects, we are pursuing the better society and the common good, as did he whose name and memory we honor here today.

Lighting Industry Short 3,000 Engineers

More than 3,000 jobs in the lighting profession will be going begging throughout the United States and Canada during the next five years, according to George J. Taylor, president of the Illuminating Engineering Society (and research vice president of Day-Brite Lighting, Inc., New York). The lack of new engineers, he points out, will seriously endanger the development of new techniques and refinements in the lighting profession.

"Scientific research teams at universities in California, Ohio, Texas and New York have recently revealed that the human eye needs more light and less glare to function efficiently," Taylor said, "but we are not going to be able to act with fullest effectiveness on their laboratory findings unless we can promptly attract new lighting designers and engineers to the field."

Most candidates for engineering degrees in recent years have gone into defense electronics and into atomic-energy specialties, Mr. Taylor says. As a result, there are few candidates available to fill the 3,000 vacancies.

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Section News

MID-ATLANTIC SECTION

Philadelphia Regional Meeting

The first Philadelphia Regional Technical Meeting was held on April 23, 1959, at the Keystone Automobile Club, 220 South Broad St., Philadelphia, Penna., with an attendance of nineteen.

John Scruggs of the Traffic Engineering Bureau of the City of Philadelphia was the speaker. John discussed the Philadelphia Inter-connected Traffic Signal Plan for the Central Business District. The Signal Plan includes 292 intersections, which will be consolidated into seven interconnected signal sections.

Pittsburgh Regional Meeting

The first Pittsburgh Regional Technical Meeting was held on May 18, 1959, at the Adams House near the Irwin Interchange of the Pennsylvania Turnpike.

W. W. Rankin, Associate Traffic Engineer for the City of Pittsburgh, was the Chairman of the meeting. Panel guests were Ed Ricker, Don McNeil, and Mike Gittens. The total of 24 men included State Highway District Engineers, Traffic Engineers, Borough Managers, and one Police Chief.

The luncheon meeting was followed by a short talk by Mr. Ricker. He stressed the fact that most traffic engineers can not agree on warrants for the installation of a simple 'Stop' sign, let alone the newer 'Yield' sign. He also heartily approved the idea of holding Regional Technical Meetings in that they provide grass root thoughts on local problems in which the local people have a chance to get some answers.

Another topic discussed at the meeting concerned the signing of route numbers on various highways.

Harrisburg Regional Meeting

The first Harrisburg Regional Technical Meeting was held on April 29, 1959, at Van's Colonial Restaurant on U. S. Route 22 east of Harrisburg, Penna.

Gene Simm spoke on the new signal system which was installed in Harrisburg and answered various questions put to him during a short discussion period.

The next Regional Technical Meeting for the central or Harrisburg area will be held at the new Barbecue Cottage (formerly Van's Colonial Restaurant) on U. S. Route 22 east of Harrisburg, on Tuesday, November 24, 1959, at Noon.

News About Members

R. A. Mitchell reports that the Wilmington group, including Mrs. Mitchell and daughter, Susanne, the Mayor of Wilmington, and a member of the Street and Sewer Department Board, thoroughly enjoyed the Annual Meeting of the ITE in New York.

We hear that the Traffic Division of the Delaware State Highway Department has acquired a Wald Statesman electronically controlled truck mounted striper. Not much work has been done with it yet, because Bill Carrow and Stu Cunningham are always posing for pictures in front of it.

From our Delaware correspondent we learn that the State Highway Department, through the University of Delaware, is engaged in an economic impact study on the effect of Interstate Route 95 on the surrounding areas.

Our President, Dick Overmyer, represented the City of Philadelphia at the International Municipal Workshop on Parking, Cleveland, Ohio, on August 3rd to 5th.

Bill Canning was conspicuous by his absence from the New York convention. He was unable to attend because he was busy keeping up with legislative activities in Harrisburg.

Members of the Philadelphia area who attended the 29th Annual Meeting of the ITE in New York included Commissioner David Smallwood and Deputy Commissioner Richard Overmyer.

The Pennsylvania Department of Highways was also well represented at the Annual Meeting, with three men each from the Planning and Traffic Divisions, and Mike Gittens and Louis E. Keefer from the two Transportation Studies. Jerry Keefer is Study Director of the Pittsburgh Area Transportation Study, and Mike has changed jobs and is now Director of the Transportation Section (and Deputy Study Director) of the two and one-half million dollar Penn Jersey Transportation Study. Mike's former job in Pittsburgh is being filled by Dave Wooster.

The Philadelphia Bureau of Traffic Engineering opened its new sign shop and maintenance building at Ramona and 'G' Streets. The formal ceremony, attended by the mayor and other dignitaries, was held on September 15. It was strange that no one in the Bureau realized that this coincided with the ITE Annual Meeting in time to change the date. The dignitaries included our Section President, who therefore missed the first day and a half of the New York Annual Meeting.

Bob Hoffman was involved in a study for Conshohocken to improve their school safety program. Bob and Mose Egly from Keystone are working together on a Philadelphia Chamber of Commerce committee studying interchange considerations on the Delaware Expressway.

Felix Geissler, formerly with Gannett, Fleming, Corddry and Carpenter, has been appointed the new Director of Computer Services in the State Highways Department.

Bob Coleman, who has been in Planning & Research with the Highways Department since his return from Yale, is on detached service to the new Traffic Engineering Division. They're working hard on a new organization chart over there.

Ed Ricker has announced the acquisition by the Traffic Engineering Bureau of Maurice Berry as a Traffic Engineer II. Maury was assistant to Bill McGrath in New Haven prior to his accepting this position with the Department of Highways.

Gene Simm is getting quite a bit of national attention on his work in the city of Harrisburg. Transportation officials from Dayton, Ohio, recently paid him a visit in order to see first hand the remarkable accomplishments that he has made with the local traffic situation.

INDIANA SECTION

The August meeting of the Section was held at the Studebaker-Packard Corporation Administration Building, South Bend, on Tuesday, August 11, 1959. We were guests of Studebaker-Packard Corporation during the morning and also at a noon luncheon.

A group of 22 members and 4 guests took a conducted tour of The Studebaker-Packard Proving Grounds, located 12 miles west of South Bend. A trip around the 3 mile test track gave the group quite a thrill when the tour bus creaked and groaned as it passed through turns at about 20 MPH. The turns are banked for normal 80 MPH operation and the bus felt a little unstable until we got some beef on the right side to keep it upright.

Following a tour of the cross county route, the group was shown various testing equipment and their operation explained by Proving Ground personnel. Returning to South Bend, the group attended a luncheon sponsored by Studebaker-Packard Corporation. After lunch Mr. Allen Fitzpatrick, Manager of Fleet Sales for Studebaker-Packard gave a brief history of changes that have taken place in the automobile since 1930 and explained the reasons for his company's entrance into the small car field.

The luncheon meeting adjourned at 1:10 P.M. to the Rathskeller of the Drewry's Limited Brewery in South Bend, for a tour of the Brewery. A desire was expressed to make this type of trip more often. Thanks to our program committee for arranging a thoroughly enjoyable day.

WESTERN SECTION

San Diego

San Diego's Freeway System is starting to shape up as a large number of jobs are being completed. Bill Calland reports that three multi-milion dollar jobs are nearing completion at this time.

The Division of Highways should be complimented for their fine work in handling up to 50,000 cars a day, through eight miles of construction on U.S. 80, with little or no delay. The citizens of San Diego area are grateful for the Division of Highways' efforts in their behalf.

The Traffic Department of the Division of Highways has obtained Leigh Ballard from San Francisco to head the Traffic Estimation Section. Welcome to San Diego, Leigh, we hope to have you in the ITE soon.

The Transportation and Traffic Engineering Division of the City of San Diego is reassembling from their vacations and their trips to the Western Section Convention at Seattle, and reluctantly getting down to work.

John Tsiknas is kicking off a revision of the traffic signal system in downtown San Diego. The revision will provide for a flashing WAIT for peds at 20 of the most congested intersections.

Charles Strong reports that the trucking company inventory for the San Diego area is nearing completion. It is hoped that some trucking patterns can be established from this data.

Bay Area

The Bay Area held a real "Mellow" affair in San Francisco recently. Before an excellent turnout, Mel West of the California Division of Highways (Sacramento) and Mel Webber of the Department of City and Regional Planning, University of California, presented the viewpoints of the engineer and of the planner, respectively, on the problem of urban highway planning.

At the June meeting, Jim Kell introduced a resolution, which recommends a change in the requirement that all entrance ramps to interstate highways be controlled by Yield-right-of-way signs. This resolution is expected to come up for discussion and, perhaps, a vote at a future Area meeting. Jim, who is chairman of the ITE Technical Committee on Yield Signs, will present a paper at the national ITE meeting.

Under Roy Oakes' direction, the first of several pairs of one-way streets have been placed into operation in Berkeley, with more to follow. The streets involved serve both the University of California campus and the downtown business area.

The Bay Area is glad to see Dean Quimby back in San Francisco. Parsons Brinckerhoff has again assigned him to work on Bay Area Rapid Transit plans. He is well remembered here for his highly informative talks to ITE during work on the preliminary Rapid Transit study a few years ago.

Sacramento

The Sacramento Section was well represented at the Annual Meeting in Seattle. Messrs. and Mesdames Bruno Dentino, Maynard Glass, Karl Moskowitz, Dudley Stevens and Rudy Israel included the convention in their vacation tour. An exceptionally fine conference was the unanimous decision of the group. Before proceeding homeward, the grandeur of the provincial City of Victoria, B. C. was enjoyed by the group.

Chairman Zell represented the Sacramento Area at the meeting sponsored by the Engineering Council of Sacramento Valley on August 20, 1959, at which discussion was held on what the Engineering Council can and should do in support of Better Planning Projects in the Greater Sacramento Area.

Jack Faustman is again teaching the Fundamentals of Traffic Engineering at Sacramento State College as a University of California extension course. It is evident that Jack, as former Membership Committee Chairman, is going all out to get new members.

Inter-Mountain

There will be four quarterly meetings again this year with Cheyenne and Denver hosting two of them. The other meeting places are undecided as yet. The proposed Manual for Programming and Conduct of Local Area Meetings will be tried at these meetings. The first meeting will be scheduled for October, but no official program has yet been set up.

Arizona-New Mexico

Because of the extreme distance to Seattle, only two members from this Area attended the meeting this year; they were Chuck Haley and John Kennedy.

Phoenix has made a bid for the 1961 WesternITE Convention. The Board of Directors hasn't acted on this at the present date, but it is hoped that their decision will be forthcoming in the near future.

Much to the joy of Chuck Haley, and the City of Phoenix, their long awaited, much cussed and discussed street improvement program seems to be finally underway. Bids have been opened for the improvement of a mile section of arterial street, with another mile and a half of the same street anticipated in the near future.

At the Arizona Highway Department the interstate work still continues to dominate most of the lighting and signalization work. The Department is trying to do all of the design work in these categories, but lack of sufficient personnel makes it impossible.

In regard to the interstate signing program, the Department is in the process of obtaining permission to hire sufficient personnel to inaugurate this program.

CANADIAN SECTION

Joint Committee Meeting, Ottawa, May 6-8

Three years of toil, prolific letter writing, tense meetings, draft revisions and complex committee work came to an end when at 5:30 Friday, May 8, Walter Macnee called for a motion to adopt the Sign chapter of the Joint Manual as amended. The Signals chapter had been adopted early the previous afternoon, and by 5:30 on Friday afternoon it was clear for the first time that the printed manual would be available by the September deadline.

There was a large turnout (26) with W. J. Yabsley from Newfoundland and John Harding from Victoria travelling the furthest. With the large turnout Walter had a big job to pilot the meeting—but had no trouble keeping everyone on the track and finishing up on time.

Tom Hewton did an excellent job in assisting Walter put the finishing touches to the Signals chapter.

Many ITE members deserve special attention for the unfailing contributions made to all three chapters of the manual—but the work of Jacques Barriere and Ken Vaughan Birch in handling two difficult parts of the Signs chapter stand out. Ken, particularly contributed a valuable effort with his skillful and competent handling of a section dealing with the very controversial subject of Pedestrian signs.

PARKING RAMPS

(Continued from page 14)

detector. An array of detectors is located across the roadway so that when a single vehicle passes through the detection zone, a single count is obtained, regardless of the vehicle's position in the roadbed. The vehicle may be in either of the two lanes or may straddle both lanes. Should a second vehicle pass through the detection zone, abreast of the first, a second count is obtained. Two vehicles can pass through simultaneously or in an overlapping fashion and they can stop in the detection zone and start up again, without error.

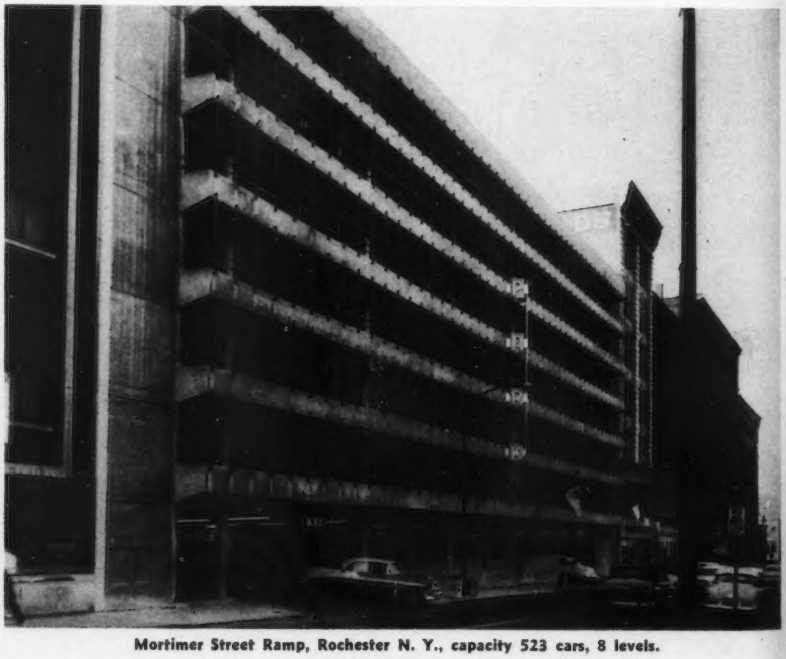
Nothing but inert components are in the roadway. All major adjustments and replacements are done at the control box, which can be located at the side of the roadway. The detector system is designed so that it will not respond to such things as pedestrian traffic or baby strollers — only automobiles.

The second detector system, multi-lane direction vehicle detector, is similar to the above except directional characteristics are incorporated into the circuitry so that if vehicles pass through the detection zone, and then reverse their direction, either no count is obtained or two cancelling counts result.

Obviously, each parking facility requires individual analysis for the application of the computing system and the type and location of detectors. Ramps where pedestrian traffic is unlikely, can have simple inexpensive photoelectric beams. Wide access ways between areas improve traffic flow but require the more expensive multi-lane detector. Parking stall design beyond the detection zone can simplify the traffic detection. For example, if back-in stalls are used, the need for directional characteristics is eliminated.

In Rochester, the directional problem, at the main entrance of one of the ramps, was inadvertently eliminated when the authorities decided to reserve the first stalls for snow removal and sweeper equipment. When the attendant used the equipment, he was careful not to back through the detection zone.

The writer gratefully acknowledges the cooperation of Mr. R. Harrison Young, Director of Traffic Control, Rochester, New York, for his encouragement and assistance in the development of these systems.



Mortimer Street Ramp, Rochester N. Y., capacity 523 cars, 8 levels.

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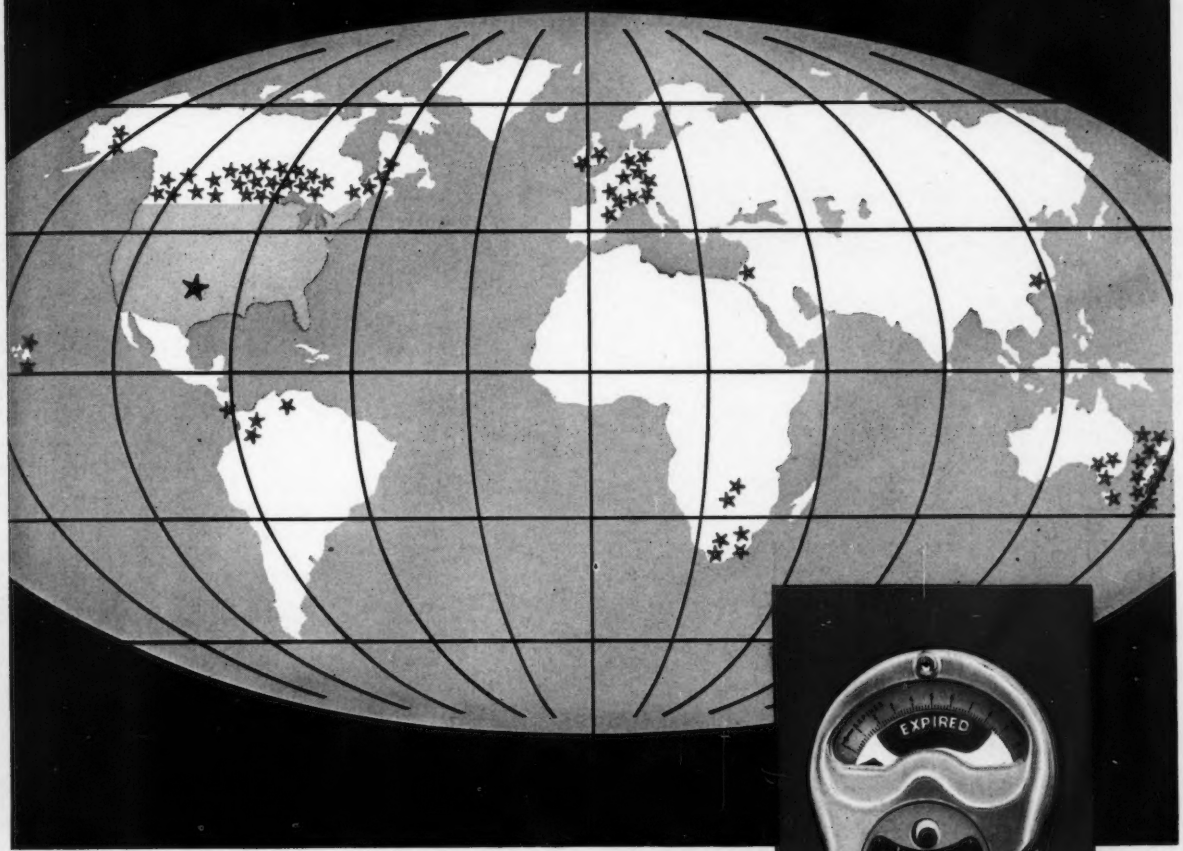

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MEMBERSHIP APPLICATIONS

The Institute of Traffic Engineers welcomes applications from qualified traffic engineers, but does not desire as members persons who are unqualified. Listed below are the names of those from whom applications for membership or transfer in grade have been received since the last published list. Institute members are urged to review this as soon as possible and immediately inform the Executive Secretary's office if names of people are found who are known to be unqualified for ITE membership or transfer.

NEW APPLICATIONS

BLINDAUER, Harlan H.
Traffic Engineer, Meissner Engineers, Inc., Reno, Nevada. September 8, 1959 for JUNIOR.

BOORSE, John W. Jr.
Traffic Engineer I, City, 1003 City Hall Annex, Philadelphia, Pa. August 18, 1959 for JUNIOR.

BREWER, C. Edwin
Engineer, Wilbur Smith & Associates, 495 Orange Street, New Haven, Connecticut. August 26, 1959 for JUNIOR.

CAPSHAW, Bobby F.
Traffic Designer, Texas Highway Dept., Division of Maintenance Operations, 11th & Brazos Streets, Austin 14, Texas. August 6, 1959 for JUNIOR.

CARTER, Arthur A.
Highway Research Engineer, (Leader, Highway Capacity Project), U. S. Bureau of Public Roads, 1717 H Street, N. W., Washington 25, D. C. September 2, 1959 for ASSOCIATE.

ECHOLS, James C.
District Traffic Engineer, Virginia Department of Highways, Bristol, Virginia. August 17, 1959 for JUNIOR.

FERNANDO, James P. A. D.
Chief Engineer Roads, Colombo, Local Government Service Commission, Townhall, Colombo 7, Ceylon. August 26, 1959 for MEMBER.

FERRERI, Michael G.
Traffic Engineer, Simpson & Custin, Transportation Engineers, 1405 Locust Street, Philadelphia, Penna. September 3, 1959 for JUNIOR.

FICKLIN, Nathan C., Jr.
Designer II, Missouri State Highway Commission, Highway Building, Jefferson City, Missouri. September 28, 1959 for ASSOCIATE.

FLETCHER, Scott
Traffic Engineer I, (Traffic Survey Engineer), City, Bureau of Traffic Engineering, Room 1002 City Hall Annex, Philadelphia, Penna. August 17, 1959 for JUNIOR.

FORRISTAL, John J.
Traffic Engineer, Alameda County, 1225 Fallon Street, Courthouse, Oakland, California. August 20, 1959 for ASSOCIATE.

GRUENBAUM, Michael
Research Assistant, Bureau of Highway Traffic, Yale University, 311 Strathcona Hall, New Haven 11, Connecticut. September 1, 1959 for JUNIOR.

HATHAWAY, Cecil W.
Highway Designer, Class III, Idaho Dept. of Highways, P. O. Box 879, Boise, Idaho. September 18, 1959 for JUNIOR.

KOLOM, Lester L.
Traffic Engineer IV, Bureau of Street Traffic, Room 709 City Hall, Chicago 2, Illinois. August 26, 1959 for ASSOCIATE.

MARTZ, William C.
Traffic Control Engineer (EIT II), City of Dayton, 101 West Third St., Dayton, Ohio. August 20, 1959 for JUNIOR.

MASCARI, John A.
Traffic Field Engineer, Bureau of Traffic Engineering, Room 7 City Hall, Indianapolis, Indiana. September 10, 1959 for ASSOCIATE.

MURRAY, Roger J. P.
Traffic Engineer I, Port of New York Authority, 111 Eighth Avenue, New York 11, N. Y. August 12, 1959 for JUNIOR.

OLIPHANT, David N.
Traffic Engineer, City Engineer's Department, Box 1583, Salisbury, S. Rhodesia. August 17, 1959 for ASSOCIATE.

OSTROWER, Donald A.
Partner, Arnold H. Vollmer Associates, 25 West 45th Street, New York 36, New York. September 25, 1959 for ASSOCIATE.

RIDDLE, Ralph M., Jr.
Traffic Engineer II, City of Baton Rouge, P. O. Box 1471, Baton Rouge, Louisiana. August 10, 1959 for JUNIOR.

RISER, Clarence E.
Graduate Engineer, Minnesota Highway Department, Division of Traffic & Planning, Highway Building, St. Paul 1, Minnesota. September 21, 1959 for JUNIOR.

ROCKAFELLOW, Richard M.
Sales Engineer, Automatic Signal Division, Eastern Industries Inc., Regent Street, E. Norwalk, Connecticut. August 14, 1959 for JUNIOR.

ROWE, Stephen E.
Traffic Engineering Assistant, City Department of Traffic, Room 1000 City Hall, Los Angeles 12, California. August 14, 1959 for JUNIOR.

SCHMIDT, James Wm.
Assistant Manager of Salt Lake Transportation Study, Utah State Road Commission, 525 West 1300 South, Salt Lake City, Utah. September 30, 1959 for JUNIOR.

SOSSLAU, Arthur B.
Highway Research Engineer, Bureau of Public Roads, 1717 H Street, N. W., Washington, D. C. October 1, 1959 for JUNIOR.

STEEGER, Otto G.
Assistant Traffic Engineer, Acting Chief for Division of Traffic Engineering, Montgomery County, Rockville County Office Building, Rockville, Maryland. August 13, 1959 for ASSOCIATE.

TORRES, Gilberto Lugo
Chief, Planning & Programming Section, Bureau of Traffic, Department of Public Works, Box 8218, Santurce 29, Puerto Rico. September 15, 1959 for JUNIOR.

TUMMARELLO, Anthony P., Jr.
Ass't Project Engineer, Arnold H. Vollmer Associates, 67 West 44th St., New York, N. Y. August 17, 1959 for JUNIOR.

VOLLMER, Arnold H.
Consulting Engineer (Self), Arnold H. Vollmer Associates, 25 West 45th Street, New York 36, New York. September 17, 1959 for MEMBER.

WERT, Robert E.
Traffic Control Engineer (EIT II), City of Dayton, Municipal Building, Ludlow & Third Streets, Dayton, Ohio. September 1, 1959 for JUNIOR.

APPLICATIONS FOR TRANSFER

BERMAN, Jack
Highway Research Engineer, U. S. Bureau of Public Roads, 1717 H Street, N.W., Washington, D. C. September 10, 1959 for ASSOCIATE.

CARSON, William L.
Traffic Engineer, American Automobile Association, 1717 G Street, N. W., Washington 6, D. C. June 15, 1959 for ASSOCIATE.

CLIFFORD, Eugene J.
City Traffic Engineer, 900 East Broad Street, Richmond 10, Virginia. August 25, 1959 for MEMBER.

GREGORY, Randolph T.
Director of Traffic & Planning, City, Room 305 City Hall, Waco, Texas. September 4, 1959 for MEMBER.

WRIGHT, Joe E.
Traffic Survey Manager, Texas Highway Department, Highway Building, Austin 14, Texas. September 30, 1959 for MEMBER.

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Yearbook Changes

BREUNING, Siegfried M. (Junior)
Assoc. Professor of Civil Engineering, Dept. of Civil Engineering & Highway Traffic Safety Center, Michigan State University, E. Lansing, Michigan. EDgewood 2-1511, Ext. 2855.

BUTTZ, Charles W. (Junior)
Traffic Engineer, Tippetts-Abbett-McCarthy-Stratton, 62 West 47th Street, New York 36, New York. PLaza 7-8000. SEND MAIL: 7 Abbey Road, Darien, Connecticut.

COX, James H. (Junior)
Assistant District Engineer—Traffic, Greenfield District, Indiana Highway Department, P.O. Box 150, Greenfield, Indiana. HOpkins 2-5533. SEND MAIL: 4213 North Ritter Ave., Indianapolis 26, Indiana.

GIBSON, James K. (Member)
Principal Transportation Engineer, California Public Utilities Commission, State Building, Civic Center, San Francisco, California. UNderhill 1-8700. SEND MAIL: 27 Crystal Springs Rd., Apt. 7, San Mateo, California.

GITTENS, Michael J. (Member)
Director, Transportation Section, Penn-Jersey Transportation Study, Philadelphia State Office Bldg., Room 116, 1400 Spring Garden Street, Philadelphia 30, Pennsylvania.

GONSETH, Alan T. (Junior)
Planning Technician, Port Development, Port of New York Authority, 111 Eighth Avenue, New York 11, New York. ALgonquin 5-1000.

HAMMOND, Daniel S. (Member)
Highway Engineer, U. S. Bureau of Public Roads, Room 1201, D & H Building, Albany, New York. ALbany 5-8811, Ext. 105. SEND MAIL: 25 Ronald Place, Schenectady, N. Y.

HARVEY, Alexander (Associate)
Project Manager, DeLeuw, Cather & Co., of Canada Ltd., 1491 Yonge Street, Toronto 7, Ontario, Canada. WAlnut 5-3124.

HUBBARD, Robert A. (Junior)
Associate Traffic Engineer, Traffic & Planning Division, Virginia Department of Highways, 1221 East Broad Street, Richmond 19, Virginia.

KELLER, Olivier (Junior)
Ingenieur, Inspection Federale des Travaux Publics, 45, Monbijoustrasse, Berne, Switzerland.

PELLEGRINI, Giorgio (Junior)
c/o Civil Engineering Dept., Technological Institute, Northwestern University, Evanston, Illinois.

RICKER, Edmund R. (Member)
Chief Traffic Engineer, Pennsylvania Dept. of Highways, 21st & Herr Streets, Harrisburg, Penna. CEdar 3-5151, Ext. 2729. SEND MAIL: 1709 Mitchell Rd., Harrisburg, Pa.

SAAG, James B. (Junior)
Traffic Engineer, DeLeuw, Cather & Company, 150 N. Wacker Drive, Chicago 6, Illinois. FInancial 6-0424. SEND MAIL: 233 Callan Avenue, Evanston, Illinois.

SCHWARZ, Captain Robert H. (Junior)
U. S. Army Transportation Corps, U. S. Army Command & General Staff College, 10 Dickman Avenue, Ft. Leavenworth, Kansas. Leavenworth MU 2-4234.

SIMMONS, Cecil L. (Associate)
Traffic Engineer, City Hall Annex, Grand Rapids 2, Michigan. GLendale 6-6566. SEND MAIL: 557 Russwood Ave., N. E., Grand Rapids, Michigan.

SINEMUS, Herman A. (Junior)
Assistant Traffic Engineer, City, 425 South Calhoun Street, Fort Wayne, Indiana. A-7441, Ext. 283 SEND MAIL: 1622 Edenton Drive, Fort Wayne, Indiana

SMITH, Charles A. Jr. (Junior)
Highway Project Planner, Planning Division, Port of New York Authority, 111 Eighth Avenue, New York 11, New York. ALgonquin 5-1000, Ext. 8063

SORANNO, Vito V. (Junior)
Planning Technician, Highways, Port of New York Authority, 111 Eighth Avenue, New York 11, New York. ALgonquin 5-1000 SEND MAIL: 9 Prospect Park West, Brooklyn, New York

SPEER, Richard C. (Junior)
Engineer II (Traffic), Bureau of Traffic Engineering, City, 420 S. W. Main Street, Portland, Oregon. CApitol 8-6141, Ext. 356

STEGMAIER, Joseph T. (Associate)
Highway Engineer, D. C. Division Office, U. S. Bureau of Public Roads, 701 Pennsylvania Building, Washington 25, D. C. EXecutive 3-4950, Ext. 5279 SEND MAIL: 134 North French, Alexandria, Virginia

STENGER, Philip J. (Associate)
Associate Traffic Engineer, Traffic & Planning Division, Virginia Dept. of Highways, 1221 E. Broad Street, Richmond, Virginia. MIlton 4-4111, Ext. 2841 SEND MAIL: 1208 Santa Rosa Road, Richmond 29, Virginia

STROMBOM, Donald A. (Junior)
Assistant Highway Engineer, Planning Division, Washington State Highway Department, Olympia, Washington. FLeetwood 2-5611, Ext. 8131

STRONG, Charles P. (Associate)
Asst. Traffic Engineer, Transportation & Traffic Engineering Division, City, Food & Beverage Building, Balboa Park, San Diego 1, California. BElmont 9-7511, Ext. 313. SEND MAIL: 6241 Del Cerro Blvd. San Diego 20, California.

STUBING, Henry D. (Junior)
Highway Engineer, DeLeuw, Cather & Brill, c/o P. O. Box P, Station A., Hartford 6, Conn. MEdford 3-4646 (Glastonbury, Conn.) SEND MAIL: 111-18-202 Street, Hollis 12, New York.

TREITERER, Joseph (Associate)
Head, Traffic & Safety Division, National Institute for Road Research, Council for Scientific & Industrial Research, P. Bag 191, Pretoria, Union of South Africa. PRetoria 3-1261 SEND MAIL: 28, Nellmapius Drive, Irene Tvl., Union of South Africa

TSIKNAS, John C. (Associate)
Associate Traffic Engineer, City, 259 Civic Center, San Diego 1, California. BElmont 9-7511, Ext. 321

VANDERSTEMPEL, Theodore M. (Member)
City Traffic Engineer, City Hall, Holland & So. Washington Avenue, Saginaw, Michigan.

VICK, Alfred III (Associate)
Highway Engineer, Operations Division, U. S. Dept. of Interior, National Park Service, 900 North Lombardy Street, Richmond 20, Virginia. SEND MAIL: 304 Ralston Road, Richmond 29, Virginia.

VILLEMUR, Jean (Junior)
Engineer i/c Design & Planning Section, Traffic Department, 1125 Ontario Street, East, Montreal, Quebec, Canada. UNiversity 1-3811, Local 2410 SEND MAIL: 5051 Lotbiniere Park, Montreal 5, Quebec, Canada

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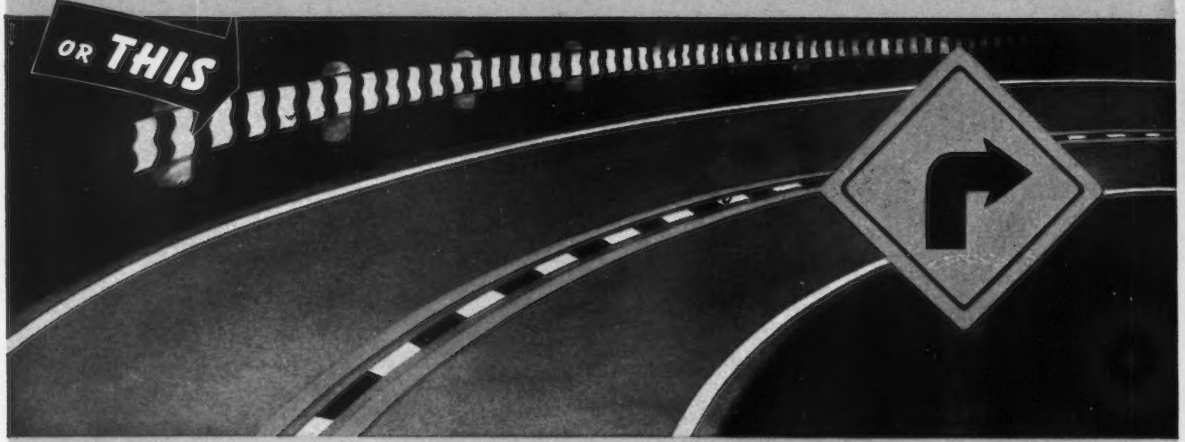

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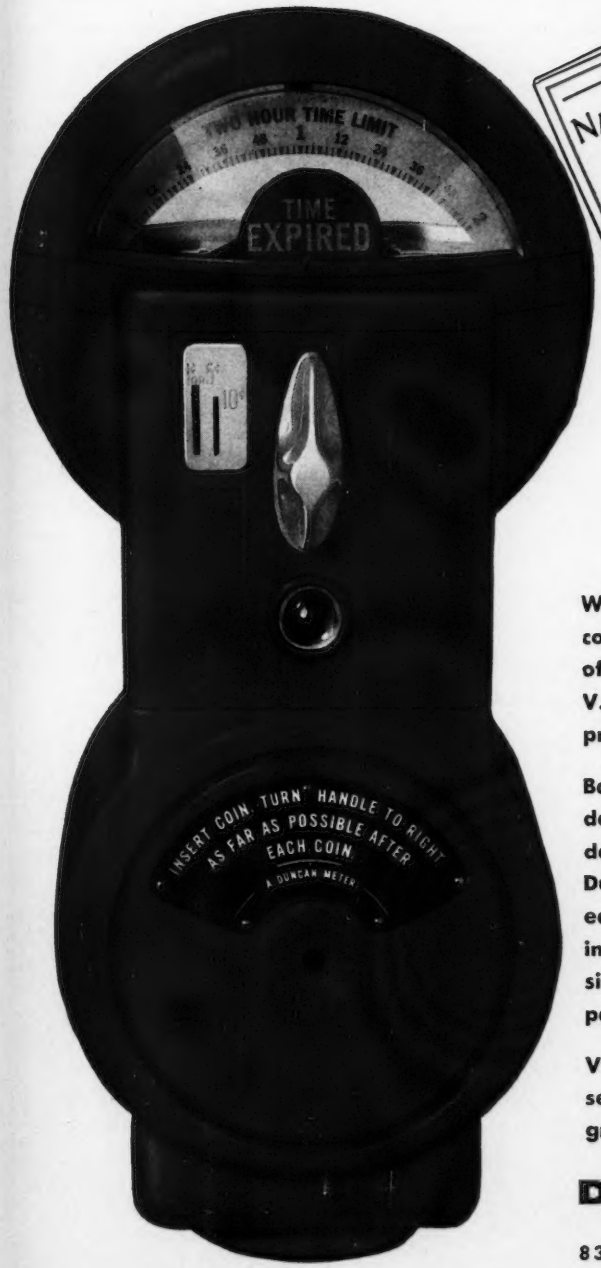

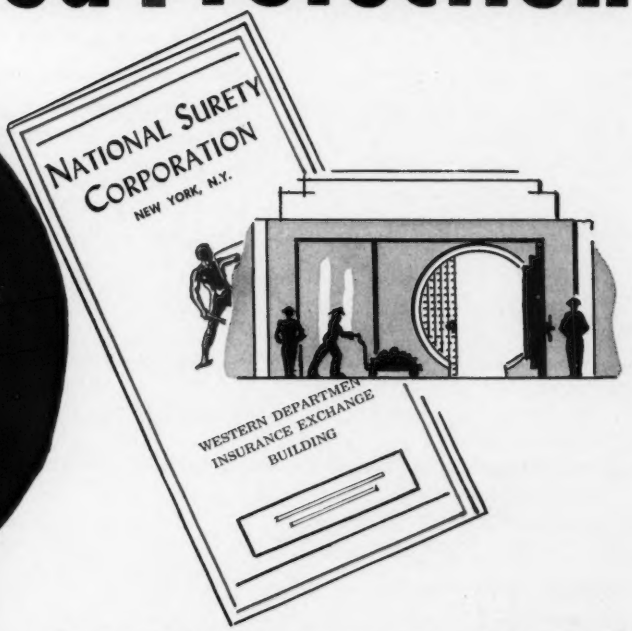

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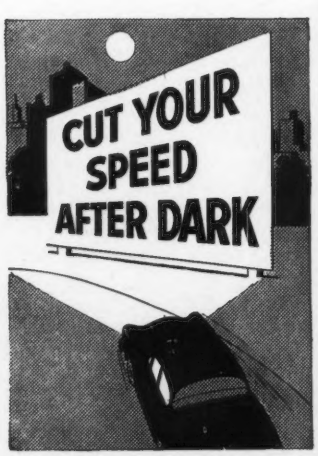

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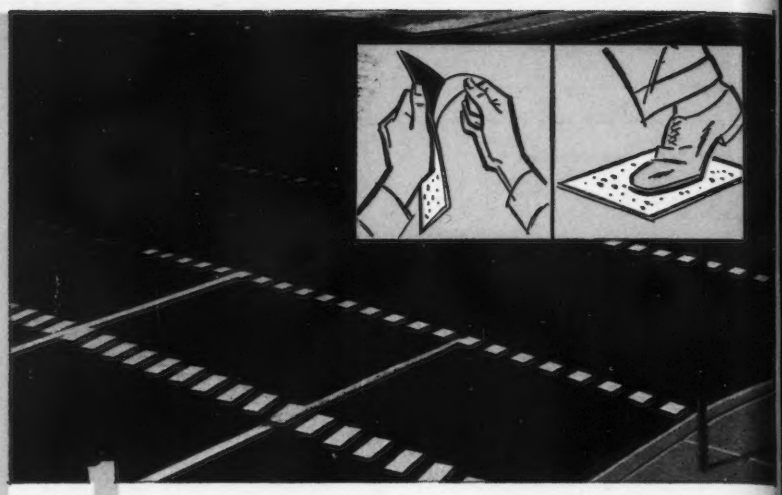

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